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Elliot L. Richardson, Secretary

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Robert M. White, Administrator

ENVIRONMENTAL DATA SERVICE

Thomas S. Austin, Director

Solar - Geophysical Data

NO. 385 SEPTEMBER 1976

Part I (Prompt Reports)

DATA FOR
AUGUST 1976
JULY 1976

**NATIONAL GEOPHYSICAL AND SOLAR - TERRESTRIAL DATA CENTER
BOULDER, COLORADO**

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No. 385

Issued in two parts

Hope I. Leighton, Editor

J. Virginia Lincoln, Director
Solar - Terrestrial Data Services Division

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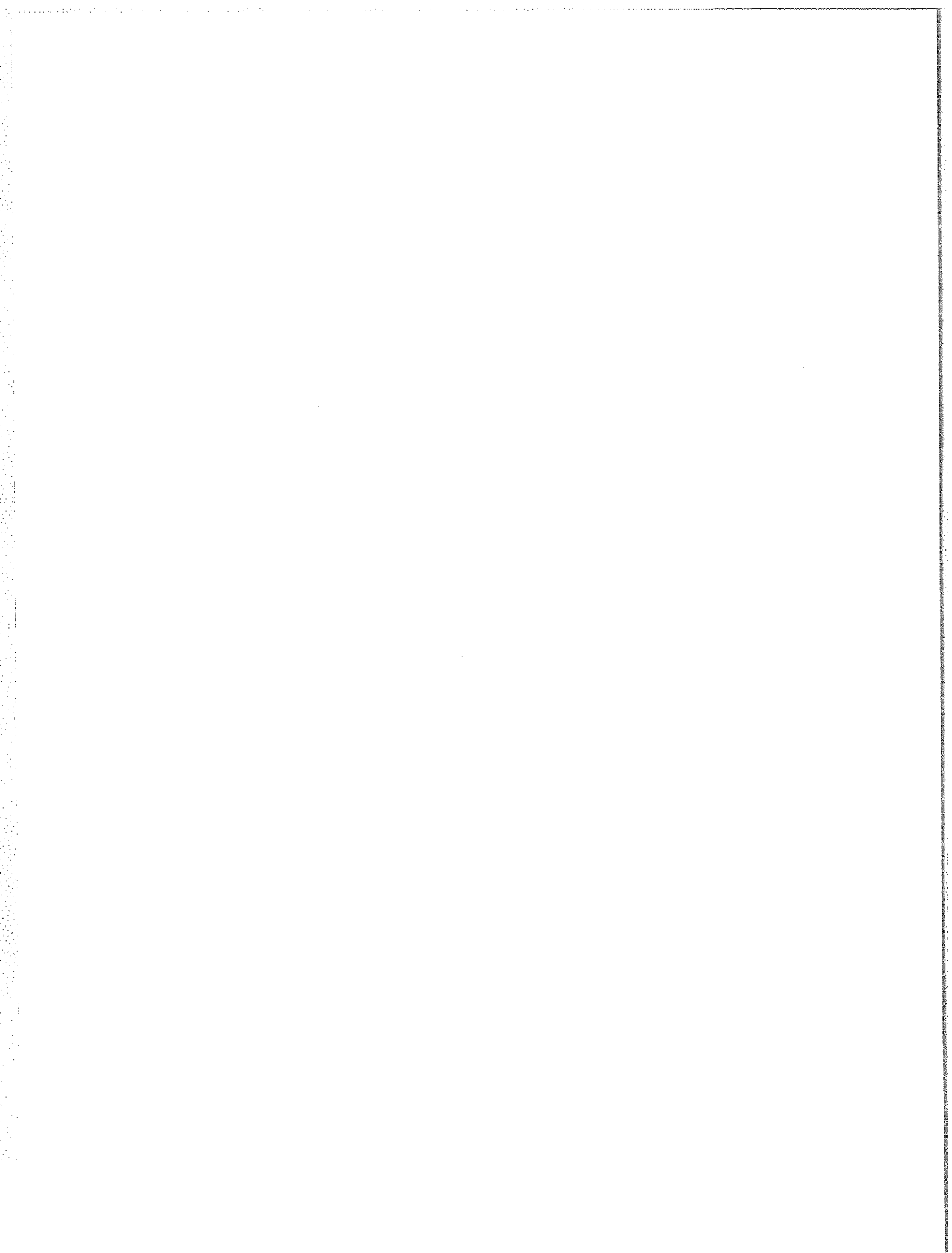
INDEX FOR 1975 - 1976 DATA PUBLISHED IN "SOLAR-GEOPHYSICAL DATA"

	1975	Sep	Oct	Nov	Dec	1976	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
A. Solar and Interplanetary Phenomena														
A.1 Sunspot Drawings	374A 28	375A 24	376A 28	377A 26	378A 28	379A 26	380A 36	381A 30	382A 26	383A 26	384A 24	385A 26		
A.2a Zürich Provisional Relative Sunspot Numbers R _Z	373A 7	374A 7	375A 7	376A 7	377A 7	378A 7	379A 7	380A 7	381A 7	382A 7	383A 7	384A 7	385A 7	
A.2b Zürich Final Sunspot Numbers R _Z	378A 6	378A 6	378A 6	378A 6	378A 6	378A 6								
A.2c American Relative Sunspot Numbers R _A	373A 7	374A 7	375A 7	376A 7	377A 7	378A 7	379A 7	380A 7	381A 7	382A 7	383A 7	384A 7	385A 7	
A.3a Mt. Wilson Magnetograms	374A 28	375A 24	376A 28	377A 26	378A 28	379A 26	380A 36	381A 30	382A 26	383A 26	384A 24	385A 26		
A.3b Mt. Wilson Magnetic Characteristics of Sunspots	374A 90	375A 84	376A 90	377A 86	378A 90	379A 88	380A 94	381A 92	382A 86	383A 88	384A 84	385A 88		
A.3c Kitt Peak Magnetograms	374A 28	375A 24	376A 28	377A 26	378A 28	379A 26	380A 36	381A 30	382A 26	383A 26	384A 24	385A 26		
A.4 Ha Spectrohellograms	374A 28	375A 24	376A 28	377A 26	378A 28	379A 26	380A 36	381A 30	382A 26	383A 26	384A 24	385A 26		
A.5 Calcium Flage Drawings - McMath (or Catania)	374A 28	375A 24	376A 28	377A 26	378A 28	379A 26	380A 36	381A 30	382A 26	383A 26	384A 24	385A 26		
A.5a Calcium Flage (McMath) and Sunspot Regions	374A 90	375A 84	376A 90	377A 86	378A 90	379A 88	380A 94	381A 92	382A 86	383A 88	384A 84	385A 88		
A.5b McMath Daily Calcium Flage Indices	374A 95	375A 90	376A 96	377A 92	378A 94	379A 93	380A 100	381A 97	382A 91	383A 94	384A 90	385A 93		
A.6 H _α Synoptic Charts	379B 14	380B 12	376A 27	377A 25	378A 27	379A 25	380A 33	381A 29	382A 25	383A 25	384A 23	385A 24		
A.7b Coronal Line Emission	374A 28	375A 24	376A 28	377A 26	378A 28	379A 26	380A 36	381A 30	382A 26	383A 26	384A 24	385A 26		
A.7f Helium D3 Chromosphere (Big Bear)	---	---	---	---	---	---	378A 23	379A 21	380A 30	381A 24	382A 21	383A 21	384A 19	385A 21
A.8aa 2800 MHz - Daily Values of Solar Flux (ARO-Ottawa)	373A 7	374A 7	375A 7	376A 7	377A 7	378A 7	379A 7	380A 7	381A 7	382A 7	383A 7	384A 7	385A 7	
A.8ac 2800 MHz - Daily Values of Adj. Solar Flux (ARO-Ottawa)	373A 7	374A 7	375A 7	376A 7	377A 7	378A 7	379A 7	380A 7	381A 7	382A 7	383A 7	384A 7	385A 7	
A.8b Daily Values of Adjusted Solar Flux (AFGL)	373A 7	374A 7	375A 7	376A 7	377A 7	378A 7	379A 7	380A 7	381A 7	382A 7	383A 7	384A 7	385A 7	
A.9cb 8.6 mm Radio Maps of the Sun (HELIC - La Posta)	374A 28	375A 24	376A 28	377A 26	378A 28	379A 26	380A 36	381A 30	382A 26	383A 26	384A 24	385A 26		
A.9d 2 cm Radio Maps of the Sun (HELIC - La Posta)	374A 28	375A 24	376A 28	377A 26	378A 28	379A 26	380A 36	381A 30	382A 26	383A 26	384A 24	385A 26		
A.10a 169 MHz - Interferometric Observations (Hancay)	373A 15	374A 12	375A 12	376A 14	377A 12	378A 13	379A 12	380A 15	381A 13	382A 12	383A 13	384A 12	---	
A.10c 21 cm East-West Solar Scans (Flours)	373A 17	374A 14	375A 14	376A 16	377B 57	378A 15	379A 14	380A 17	381A 15	382A 14	383A 15	384A 14	385A 14	
A.10d 43 cm East-West Solar Scans (Flours)	373A 18	374A 15	375A 15	376A 17	377B 58	378A 16	379A 15	380A 18	381A 16	382A 15	383A 16	384A 15	385A 15	
A.10e 10.7 cm East-West Solar Scans (Ottawa-ARO)	373A 16	374A 13	375A 13	376A 15	377A 13	378A 14	379A 13	380A 16	381A 14	382A 13	383A 14	384A 13	385A 13	
A.11g Solar X-ray (SMS/GOES)	373A 25	374A 20	375A 18	376A 21	377A 19	378A 20	379A 19	380A 26	381A 21	382A 18	383A 19	384A 17	385A 19	
A.11h Solar X-ray (OSO-8; 1975-057A)	374A 28	375A 24	376A 28	377A 26	378A 28	379A 26	380A 36	381A 30	382A 26	383A 26	384A 24	385A 26		
A.11b Solar EUV Spectrohellograms FeXV 284Å (AURA D2-B)	---	374A 18	---	---	377A 18	---	---	---	---	---	---	---	---	---
A.12ba Cosmic Ray Protons (Pioneers 6 & 7)	---	374A 19	---	---	---	---	---	---	---	---	---	---	---	---
A.12bb Cosmic Ray Protons (Pioneers 8 & 9)	---	374A 19	---	---	---	---	---	---	---	---	---	---	---	---
A.12c Energetic Solar Particles (IMP H & J)	380B 23	381B 39	382B 29	382B 35	382B 12	382B 17	384B 10	385B 16	---	---	---	---	---	---
A.13a Solar Wind (Pioneers 6 & 7)	---	374A 18	---	---	377A 18	378A 19	379A 18	---	---	---	---	---	---	---
A.13d Solar Wind from IPS Measurements	373A 24	374A 17	375A 17	376A 20	377A 17	378A 18	380A123	380A 25	381A 20	382A 17	383A 18	---	---	---
A.13e Solar Plasma (IMP H & J)	380B 22	381B 38	382B 28	382B 34	383B 39	383B 16	384B 9	385B 15	---	---	---	---	---	---
A.17 Interplanetary Magnetic Field (Pioneer 8)	---	374A 19	---	---	---	---	---	---	---	---	---	---	---	---
A.17 Interplanetary Magnetic Field (Pioneer 9)	---	374A 19	---	---	---	---	---	---	---	---	---	---	---	---
A.17c Inferred IP Magnetic Field	373A 29	374A 23	375A 20	376A 24	377A 21	378A 24	379A 22	380A 31	381A 25	382A 22	383A 22	384A 20	385A 22	
A.18 Interplanetary Electric Field (Pioneer 8)	---	374A 19	---	---	---	---	---	---	---	---	---	---	---	---
A.18 Interplanetary Electric Field (Pioneer 9)	---	374A 19	---	---	---	---	---	---	---	---	---	---	---	---
B. Ionospheric (and Radio Wave Propagation) Phenomena														
B.51ca High Latitude Quality Figures and Forecasts	374A115	375A103	376A113	377A111	378A114	379A115	380A119	381A126	382A113	383A118	384A108	385A113		
B.52 Graphs of Transmission Frequency Range	374A116	375A104	376A114	377A112	378A115	379A116	380A120	381A127	382A114	383A120	384A110	385A114		
B.53 Quality Figures Based on Frequency Ranges	374A118	375A106	376A116	377A114	378A117	379A118	380A122	381A129	382A116	383A119	384A109	385A116		
C. Flare-Associated Events														
C.1a Optical Observations Flares	373A 10	374A 20	375A 10	376A 10	377A 10	378A 10	379A 10	380A 10	381A 10	382A 10	383A 10	384A 10	385A 10	
C.1ba Optical Observations Flares (Standardized Data)	378B 4	379B 4	380B 4	381B 4	382B 4	383B 4	384B 4	385B 4	---	---	---	---	---	---
C.1d Flare Patrol Observations	373A 14	374A 11	375A 11	376A 13	377A 11	378A 12	379A 11	380A 14	381A 12	382A 11	383A 12	384A 11	385A 11	
C.1d Flare Patrol Observations	378B 25	379B 8	380B 7	381B 13	382B 8	383B 10	384B 7	385B 14	---	---	---	---	---	---
C.1e Flare Indices (by day)	379B 22	380B 20	381B 36	382B 26	383B 32	384B 24	385B 56	---	---	---	---	---	---	---
C.1f Flare Indices (by Region)	378B 26	379B 9	380B 8	381B 14	382B 9	383B 11	384B 3	385B 15	---	---	---	---	---	---
C.3 Solar Radio Waves - Outstanding Occurrences	373A 19	374A 16	375A 16	376A 10	377A 16	378A 17	379A 16	380A 19	381A 17	382A 16	383A 17	384A 16	385A 16	
C.3a 43.25, 80 and 160 MHz Selected Bursts (Culgoora)	374A107	376B 26	376A105	377A102	378A101	379A102	380A106	381A114	382B 37	383A103	385B 60	385A100		
C.4a Solar Radio Spectral Obs. (Fort Davis)	374A 99	375A 92	376A 98	377A 94	378A 96	379A 95	380A102	381A100	382A 93	383A 96	384A 92	385A 95		
C.4b Solar Radio Spectral Obs. (Boulder)	374A 99	375A 92	376A 98	377A 94	378A 96	379A 95	380A102	381A100	382A 93	383A 96	384A 92	385A 95		
C.4d Solar Radio Spectral Obs. (Culgoora)	378B 54	376B 24	376A 98	377A 94	378A 96	379A 95	380A102	381A100	382B 34	383A 96	385B 58	385A 95		
C.4e Solar Radio Spectral Obs. (Weissenau)	374A 99	375A 92	376A 98	377A 94	378A 96	379A 95	380A102	381A100	382A 93	383A 96	384A 92	385A 95		
C.4f Solar Radio Spectral Obs. (Sagamore Hill)	374A 99	375A 92	376A 98	377A 94	378A 96	379A 95	380A102	381A100	382A 93	383A 96	384A 92	385A 95		
C.4h Solar Radio Spectral Obs. (Dwingeloo)	---	---	376A 98	---	---	379A 95	---	381A100	382A 93	383A 96	384A 92	---	---	---
C.4i Solar Radio Spectral Obs. (Dürnten)	374A 99	375A 92	376A 98	377A 94	378A 96	379A 95	380A102	381A100	382A 93	383A 96	384A 92	385A 95		
C.4j Solar Radio Spectral Obs. (Manila)	374A 99	375A 92	376A 98	377A 94	378A 96	379A 95	380A 11	381A 98	382A 92	383A 95	384A 92	385A 95		
C.5e Solar X-ray (SMS/GOES)	373A 27	374A 22	375A 18	376A 23	377A 23	378A 22	---	380A 28	381A 23	382A 20	---	---	---	385A 20
C.6 Sudden Ionospheric Disturbances	374A 96	375A 91	376A 97	377A 93	378A 95	379A 94	380A101	381A 98	382A 92	383A 95	384A 91	385A 94		
D. Geomagnetic and Magnetospheric Phenomena														
D.1a Geomagnetic Indices Kp, K _n , K _s , K _m , Ap, aa, Cp	374A110	374A 98	376A108	377A105	378A105	379A108	380A112	381A119	382A106	383A111	385B 61	385A106		
D.1ba 27-day Chart of Kp Indices	374A111	374A 99	376A109	377A106	378A107	379A109	380A114	381A121	382A108	383A113	384A103	385A106		
D.1c 27-Day Chart of C ₉	378A108	378A108	378A108	378A108	378A108	378A108	---	---	---	---	---	---	---	---
D.1d Principal Magnetic Storms	374A113	374A101	380B 6	381B 12	382B 7	383B 9	384B 6	385B 13	---	---	---	---	---	---
D.1f Reduced Magnetograms	---	---	381B 47	382B 40	---	---	---	---	---	---	---	---	---	---
D.1f Sudden Commencement and Solar Flare Effects	374A114	374A102	376A112	377A110	378A113	379A114	380A118	381A125	382A112	383A117	384A107	385A112		
D.1g Equatorial Indices Dst	374A112	374A100	376A110	377A107	378A111	379A112	380A116	381A123	382A110	383A115	384A105	385A110		
F. Cosmic Rays														
F.1a Cosmic Ray Neutron Counts (Deep River)	374A108	375A 96	377B 34	377A103	378A104	379A103	380A107	381A110	382A101	383A104	384A 96	385A101		
F.1b Cosmic Ray Neutron Counts (Climax)	374A108	375A 96	376A106	377A103	378A104	379A103	380A107	381A110	382A101	383A104	384A 96	385A101		
F.1c Cosmic Ray Neutron Counts (Alert)	374A108	375A 96	377B 34	377A103										

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ALERT PERIODS
INTERNATIONAL URSIGRAM
AND WORLD DAYS SERVICE

AUGUST 1976

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions				Outstanding events	Forecasts			Alert Situations
						Location		No. of Flares			Date	Location	Desc*	
						Lat-Long	Total	M	X						Lat-Long
214	1	31	00	69	20	-	-	-	-	1	SPOTNIL		SOLQUIET MAGQUIET	
215	2	1	00	70	10	N14E73 N03E22	0 0	0 0	0 0	2	N14E73 N03E22	Q Q	SOLQUIET MAGQUIET	
216	3	2	23	76	08	N16E63 N07E09	0 0	0 0	0 0	3	N16E63 N07E09	Q Q	SOLQUIET MAGQUIET	
217	4	3	12	80	07	N16E49	0	0	0	4	N16E49	Q	SOLQUIET MAGQUIET	
218	5	4	15	80	07	N17E25	0	0	0	5	N17E35	Q	SOLQUIET MAGQUIET	
219	6	5	13	82	06	N17E23	1	0	0	6	N17E23	Q	SOLQUIET MAGQUIET	
220	7	6	14	82	07	N16E09	2	0	0	7	N16E09	Q	SOLQUIET MAGQUIET	
221	8	7	25	81	06	N16W04 S04E65 S24E63	2 0 0	0 0 0	0 0 0	8	N16W04 S04E65 S24E63	E Q Q	SOLQUIET MAGQUIET	
222	9	8	30	80	05	N16W16 S24E52	0 0	0 0	0 0	9	N16W16 S24E52	Q Q	SOLQUIET MAGQUIET	
223	10	9	42	81	15	N16W29 S03E25 N24E23	0 0 0	0 0 0	0 0 0	10	N16W29 S03E25 N24E23	Q Q Q	SOLQUIET MAGQUIET	
224	11	10	34	81	07	N15W44 N24E10	0 0	0 0	0 0	11	N15W44 N24E10	Q Q	SOLQUIET MAGQUIET	
225	12	11	11	78	13	N16W56 N24E04	0 0	0 0	0 0	12	N16W56 N24E04	Q Q	SOLQUIET MAGQUIET	
226	13	12	31	79	05	N16W69 N25W16	0 0	0 0	0 0	13	N16W69 N25W16	Q Q	SOLQUIET MAGQUIET	
227	14	13	34	77	05	N15W85 N24W28	0 0	0 0	0 0	14	N15W85 N24W28	Q Q	SOLQUIET MAGQUIET	
228	15	14	11	72	05	N24W42	0	0	0	15	N24W42	Q	SOLQUIET MAGQUIET	
229	16	15	20	71	03	S03W00	0	0	0	16	S03W00	Q	SOLQUIET MAGQUIET	
230	17	16	19	71	07	S02W13	0	0	0	17	S02W13	Q	SOLQUIET MAGQUIET	
231	18	17	23	76	05	S02W27	0	0	0	18	S02W27	Q	SOLQUIET MAGQUIET	
232	19	18	37	76	05	S02W39 S12E75	1 2	0 1	0 0	19	S02W39 S12E75	Q E	SOLQUIET MAGQUIET	
233	20	19	21	74	09	S02W54 S11E63	0 3	0 0	0 0	20	S02W54 S11E63	Q E	SOLQUIET MAGQUIET	
234	21	20	28	73	06	S02W65 S12E46	0 0	0 0	0 0	21	S02W65 S12E46	Q E	SOLQUIET MAGQUIET	
235	22	21	13	72	09	S12E34	0	0	0	22	S12E34	Q	SOLQUIET MAGQUIET	
236	23	22	24	71	05	S12E18 S11E29	0 0	0 0	0 0	23	S12E18 S11E29	Q Q	SOLQUIET MAGQUIET	
237	24	23	13	69	24	S11E16	0	0	0	24	S11E16	Q	SOLQUIET MAGALERT MINOR 25/26	
238	25	24	13	69	27	S11W05	0	0	0	25	S11W05	Q	SOLQUIET MAGALERT 25/26	
239	26	25	12	69	24	S11W17	0	0	0	26	S11W17	Q	SOLQUIET MAGALERT 26/26	
240	27	26	25	69	27	S12W30 S08E11	0 0	0 0	0 0	27	S12W30 S08E11	Q Q	SOLQUIET MAGNIL	
241	28	27	11	70	17	S08E01	0	0	0	28	S08E01	Q	SOLQUIET MAGQUIET	
242	29	28	34	71	13	S12W41 S07W06 N15E81	0 0 0	0 0 0	0 0 0	29	S12W41 S07W06 N15E81	Q Q Q	SOLQUIET MAGQUIET	
243	30	29	11	72	07	N15E69	0	0	0	30	N15E69	Q	SOLQUIET MAGQUIET	
244	31	30	11	73	06	N17E51	0	0	0	31	N17E51	Q	SOLQUIET MAGQUIET	
245	1	31	24	72	06	N17E37 S18W56	0 0	0 0	0 0	1	N17E37 S18W56	Q Q	SOLQUIET MAGQUIET	

* Q=Quiet E=Eruptive A=Active P=Proton C=Caution D=Doubtful O.G.=Other Groups MF=Major Flare

6
Aug 76

RELATIVE SUNSPOT NUMBERS
ZURICH, R_Z

DAY	1975 FINAL				1976 PROVISIONAL							
	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
1	14	15	0	7	0	0	0	26	35	0	9	10
2	16	8	0	23	0	0	0	25	26	0	8	18
3	19	9	7	20	0	0	0	22	25	0	14	19
4	29	10	18	23	0	0	0	13	8	0	8	14
5	25	8	22	21	0	0	0	12	22	0	6	17
6	24	10	27	18	0	0	10	9	10	0	10	15
7	24	9	30	20	0	0	12	0	10	0	7	26
8	23	16	33	18	0	0	7	0	9	11	0	30
9	17	15	30	8	0	0	10	8	8	10	0	31
10	10	8	26	0	0	0	12	10	10	7	0	24
11	10	8	30	0	0	0	13	15	16	7	0	22
12	16	10	24	0	20	0	13	17	17	8	0	29
13	19	21	22	0	26	13	13	17	23	8	0	27
14	17	26	29	7	36	16	22	19	30	15	0	16
15	8	21	28	7	29	18	16	19	17	18	0	8
16	14	18	28	7	22	11	11	19	12	12	0	15
17	14	16	30	9	24	8	30	24	18	18	0	19
18	18	16	33	8	20	15	45	27	8	24	0	23
19	13	15	36	7	18	10	51	27	20	23	0	25
20	30	10	35	0	16	12	51	30	20	17	0	19
21	27	7	31	0	11	6	48	39	14	30	0	17
22	23	0	23	0	10	7	36	20	7	31	0	8
23	0	0	12	0	10	0	28	17	15	23	0	9
24	0	7	11	18	0	7	25	16	8	26	0	17
25	0	0	9	14	0	0	22	17	0	19	0	9
26	0	0	7	8	0	0	42	28	7	19	0	14
27	0	0	0	0	7	7	46	23	0	9	0	7
28	0	0	0	0	0	0	50	21	0	16	0	8
29	0	0	0	0	14	0	42	26	0	11	0	5
30	7	0	0	0	8	0	32	38	0	10	0	10
31		0		0	0		27		0		0	9
MEAN	13.9	9.1	19.4	7.3	8.5	4.6	23.0	19.5	12.7	12.4	2.1	16.3

1975 yearly mean = 15.5

DAILY SOLAR FLUX AT 2800 MHz
OTTAWA ARO

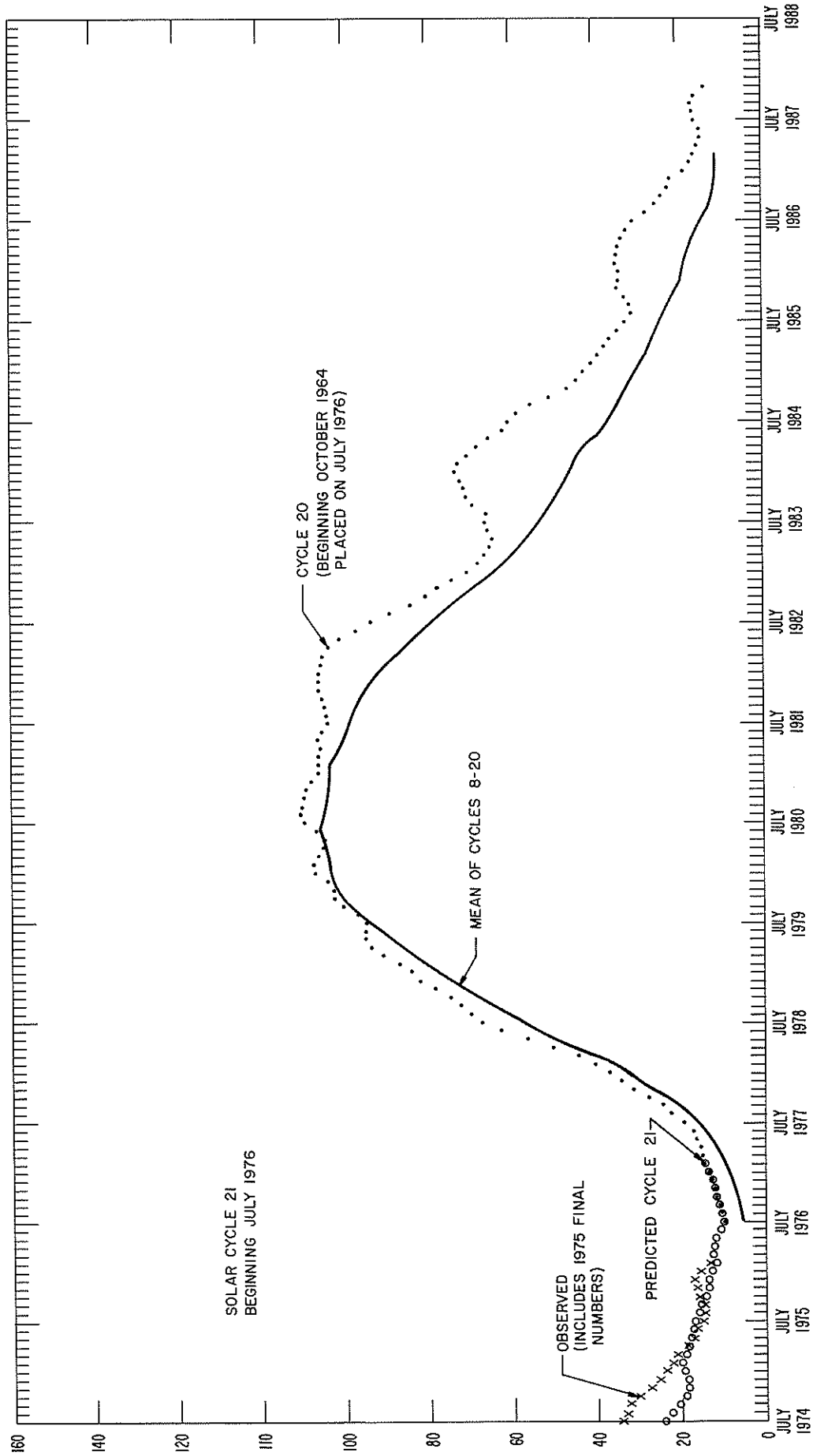
FLUX ADJUSTED TO 1 A.U., S₀

DAY	1975				1976							
	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
1	87.0	76.4	70.4	72.1	72.1	68.0	67.7	79.6	77.6	68.4	69.3	75.9
2	87.9	78.1	71.4	74.8	71.2	68.0	68.1	76.8	74.2	67.9	69.1	77.8
3	87.8	78.4	73.0	74.3	71.3	68.4	67.4	76.1	71.9	68.1	69.5	82.3
4	92.8	76.3	75.4	74.1	71.8	68.4	67.4	74.7	71.5	68.4	68.6	82.3
5	94.4	76.1	78.9	77.4	71.9	67.6	67.6	73.0	71.1	68.7	69.5	84.2
6	94.0	75.1	80.1	75.8	71.7	68.1	67.5	71.3	69.9	69.3	69.6	84.3
7	91.1	74.3	80.5	73.7	71.6	69.3	67.9	70.3	70.3	69.0	69.5	83.7
8	88.5	74.0	80.9	76.0	70.9	68.4	67.9	71.9	73.2	70.7	69.7	82.0
9	84.3	75.4	78.8	73.3	69.4	68.3	68.2	74.1	70.6	70.1	69.7	82.8
10	82.5	74.3	78.9	73.3	70.5	68.5	68.4	75.3	71.7	71.0	76.1	82.8
11	81.1	73.3	78.6	74.3	72.1	68.4	68.8	77.1	72.5	71.4	70.2	80.4
12	78.2*	74.8	79.3	73.4	76.9	67.8	68.9	78.1	72.6	71.7	69.8	80.6
13	75.2	79.6	79.2	72.8	80.0	69.7	70.9	79.6	73.6	72.0	69.8	78.7
14	74.2	80.9	82.7	71.8	82.1*	59.9	70.1	79.5	74.2	73.7	70.7	73.4
15	74.1	80.3	83.7	71.8	80.4	69.0	69.1	79.2	76.9	74.3	71.4	72.3
16	74.3	78.5	87.6	70.5	78.1	69.7	72.5	80.6	79.2	77.1	69.8	72.9
17	74.8	78.9	88.9	70.5	76.6	69.9	74.4*	80.5	76.5	77.1	69.4	77.8
18	76.2	79.2	90.8*	69.5	76.7	70.1	79.0	80.5	75.6*	77.9	70.6	78.2
19	76.2	78.0	93.0*	69.1	75.2	70.1	81.6*	79.8	73.8	76.9	70.2	76.1
20	76.5	77.1	90.9	69.7	74.6	70.0	85.0	80.0	73.0	76.9	69.4	74.5
21	76.7	75.7	86.6	69.0	72.1	68.8	91.2	78.0	74.0	77.7	70.1	73.2
22	75.3	74.2	81.5	68.9	70.9	68.9	83.0	76.2*	72.6	78.9	70.1	72.3
23	76.1	74.3	77.2	69.5	70.2	69.2	86.9	75.7	71.9	76.5	68.7	70.8
24	76.6	72.7*	74.7	71.4	68.5	69.6	82.2*	76.0	70.8	75.2	69.4	70.9
25	76.7	72.1	73.7	71.0	68.2	68.4	85.1	75.7	69.8	74.9	68.8	70.6
26	76.7	71.9	71.9	71.8	68.2	68.5	84.1*	75.7	69.5	74.3	68.6	70.1
27	75.7	72.1	70.7	72.5	67.2	69.9	89.5	74.6	69.6	72.8	69.4	71.5
28	76.1	71.7	70.4	71.5	67.1	67.9	87.1*	73.4	69.0	71.8	69.4	72.8
29	75.9	70.8	70.9	72.5	67.4	67.4	84.0	79.6	68.0	71.3	69.4	73.3
30	75.8	70.2	70.6	71.9	68.9		82.4	79.5*	68.1	70.3	70.7	73.0
31		69.9		72.1	69.1		82.7		68.7		72.3	73.8
MEAN	80.4	75.3	79.1	72.3	72.4	68.8	75.8	76.7	72.2	72.8	69.8	76.6

* adjusted for burst

DAILY SOLAR INDICES
AUGUST 1976

AUG 1976	YEAR DAY	BARTELS 27-DAY CYCLE NUMBER	SUNSPOT NUMBERS		OBSERVED FLUX OTTAWA 2800	SOLAR FLUX ADJUSTED TO 1 A.U.									
			R _Z	R _{A'}		AFGL 15400	AFGL 8800	AFGL 4995	OTTAWA 2800	AFGL 2695	AFGL 1415	AFGL 606	AFGL 410	AFGL 245	
1	214	13	10	7	73.7	524	274	119	75.9	73.4	46.5	35.5	19.1	16.2	
2	215	14	18	12	75.5	524	275	120	77.8	75.6	45.6	37.2	31.8	35.4	
3	216	15	19	13	79.9	524	281	126	82.3	80.1	44.2	37.9	24.4	21.5	
4	217	16	14	12	80.0	519	281	127	82.3	80.2	48.7	34.9	28.6	20.9	
5	218	17	17	14	81.8	517	279	130	84.2	81.2	49.9	34.8	24.4	26.3	
6	219	18	15	12	81.9	519	281	128	84.3	81.6	50.5	37.0	24.2	10.2	
7	220	19	26	14	81.4	522	281	128	83.7	79.3	51.7	49.9	33.5	30.0	
8	221	20	30	18	79.8	522	280	127	82.0	79.4	50.0	37.8	21.7	12.4	
9	222	21	31	18	80.5	525	282	127	82.8	78.6	49.6	37.7	22.2	14.1	
10	223	22	24	21	80.6	523	280	125	82.8	80.2	50.6	38.2	27.0	13.8	
11	224	23	22	22	78.3	520	277	124	80.4	78.1	46.6	38.5	24.0	12.1	
12	225	24	29	22	78.5	510	274	122	80.6	77.1	45.5	38.3	24.5	10.3	
13	226	25	27	19	76.7	518	264	121	78.7	75.3	47.4	35.3	24.6	9.5	
14	227	26	16	12	71.5	520	261	115	73.4	70.0	43.5	35.6	21.4	8.7	
15	228	27	8	5	71.0	521	260	115	72.8	70.0	42.1	34.7	22.5	8.8	
16	229	1	15	14	71.1	525	266	117	72.9	70.7	43.7	36.4	22.4	10.0	
17	230	2	19	19	75.9	524	280	122	77.8	74.6	41.4	37.3	19.3	8.4	
18	231	3	23	21	76.3	518	280	121	78.2	75.6	42.8	37.6	20.2	11.1	
19	232	4	25	25	74.3	521	286	123	76.1	75.3	44.5	38.3	20.7	8.5	
20	233	5	19	20	72.8	519	281	118	74.5	72.1	40.6	33.9	19.3	7.8	
21	234	6	17	14	71.6	514	265	115	73.2	68.7			19.0	8.0	
22	235	7	8	10	70.7	511	267	114	72.3	68.8			22.4	8.1	
23	236	8	9	10	69.3	514	267	113	70.8	67.8	39.0	34.0	19.6	7.8	
24	237	9	17	13	69.4	515	271	114	70.9	67.0	38.9	35.3	18.6	7.5	
25	238	10	9	10	69.1	512	273	114	70.6	67.4	40.5	35.9	21.1	8.0	
26	239	11	14	8	68.7	509	267	113	70.1	67.3	40.8	34.5	20.7	8.6	
27	240	12	7	3	70.0	514	268	114	71.5	68.1	43.5	33.8	21.1	8.5	
28	241	13	8	6	71.4	520	270	116	72.8	69.5	42.6	34.8	21.2	9.6	
29	242	14	9	9	71.9	517	273	116	73.3	70.3	43.6	34.3	20.4	10.8	
30	243	15	10	10	71.6	515	275	115	73.0	70.8	42.3	35.8	21.9	10.1	
31	244	16	9	11	72.4	513	275	116	73.8	72.5	41.9	36.8	19.8	14.1	
MEAN			16.9	13.7	74.8	518	274	120	76.6	73.8	44.9	36.6	22.6	12.8	



PREDICTED AND OBSERVED SUNSPOT NUMBERS

SMOOTHED OBSERVED AND PREDICTED SUNSPOT NUMBERS
CYCLE 21

MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1976	15.5	13.4	12.2 (--)	11.1 (--)	10.2 (--)	10.1 (--)	10.0 (--)	10.3 (1)	10.9 (1)	11.5 (2)	12.1 (3)	12.6 (3)
1977	13.6 (4)	14.5 (5)	15.3 (7)	16.8 (8)	18.4 (10)	19.7 (12)	21.7 (14)	24.1 (17)	27.2 (20)	30.6 (23)	33.9 (26)	36.5 (29)
1978	39.4 (32)	42.8 (36)	46.3 (40)	50.3 (43)	54.6 (47)	59.5 (52)	63.8 (55)	66.9 (59)	69.4 (62)	71.7 (65)	75.1 (66)	79.8 (68)
1979	84.4 (71)	88.2 (74)	93.0 (77)	97.3 (79)	100.1 (81)	102.0 (83)	104.1 (87)	107.0 (90)	109.4 (92)	110.5 (93)	110.4 (94)	110.3 (94)
1980	109.7 (93)	109.7 (90)	109.0 (87)	110.4 (84)	112.0 (83)	113.3 (83)	114.4 (79)	115.0 (76)	114.6 (73)	114.4 (70)	114.7 (70)	114.9 (69)
1981	116.5 (69)	119.2 (70)	118.2 (70)	114.6 (68)	111.7 (66)	110.2 (64)	109.5 (62)	110.0 (60)	111.4 (59)	112.4 (58)	112.3 (57)	111.0 (54)
1982	108.2 (51)	104.1 (49)	101.5 (47)	100.0 (46)	98.6 (44)	96.6 (42)	93.3 (41)	88.5 (39)	83.5 (37)	80.4 (33)	75.7 (29)	72.8 (27)
1983	69.8 (26)	67.2 (25)	65.8 (24)	65.1 (23)	64.3 (23)	63.1 (22)	61.6 (23)	61.7 (22)	62.5 (22)	62.4 (23)	62.3 (24)	62.0 (25)
1984	61.5 (25)	60.4 (25)	58.4 (25)	55.8 (24)	53.0 (24)	50.9 (26)	50.0 (27)	48.1 (28)	45.6 (29)	44.1 (28)	42.8 (26)	41.6 (25)
1985	41.0 (24)	40.0 (23)	38.6 (23)	37.6 (22)	37.1 (22)	36.2 (22)	34.6 (21)	33.1 (20)	32.1 (19)	31.3 (19)	30.8 (19)	29.7 (20)
1986	29.2 (20)	29.8 (20)	29.9 (19)	29.2 (18)	27.8 (17)	26.3 (16)	25.0 (15)	23.5 (15)	22.3 (14)	21.5 (13)	20.7 (11)	20.3 (10)
1987	19.4 (8)	18.3 (8)	17.6 (8)	17.4 (9)								

For each month, the upper figure is the observed or predicted Zürich smoothed sunspot number. The lower figure in parenthesis is the corresponding absolute value of the 90% prediction interval, an indication of the uncertainty above and below the predicted number. Observed numbers are those with no prediction intervals. The observed smoothed sunspot numbers are based on final Zürich numbers through 1975.

The predicted sunspot numbers are derived from a regression analysis based on cycles 8 through 20. Tests indicate that earlier cycles are from a different statistical population.

This prediction for the new sunspot cycle is based on an assumption that sunspot minimum occurred in July 1976 with a smoothed number of 10. The predictions will be changed after sunspot minimum has been observed.

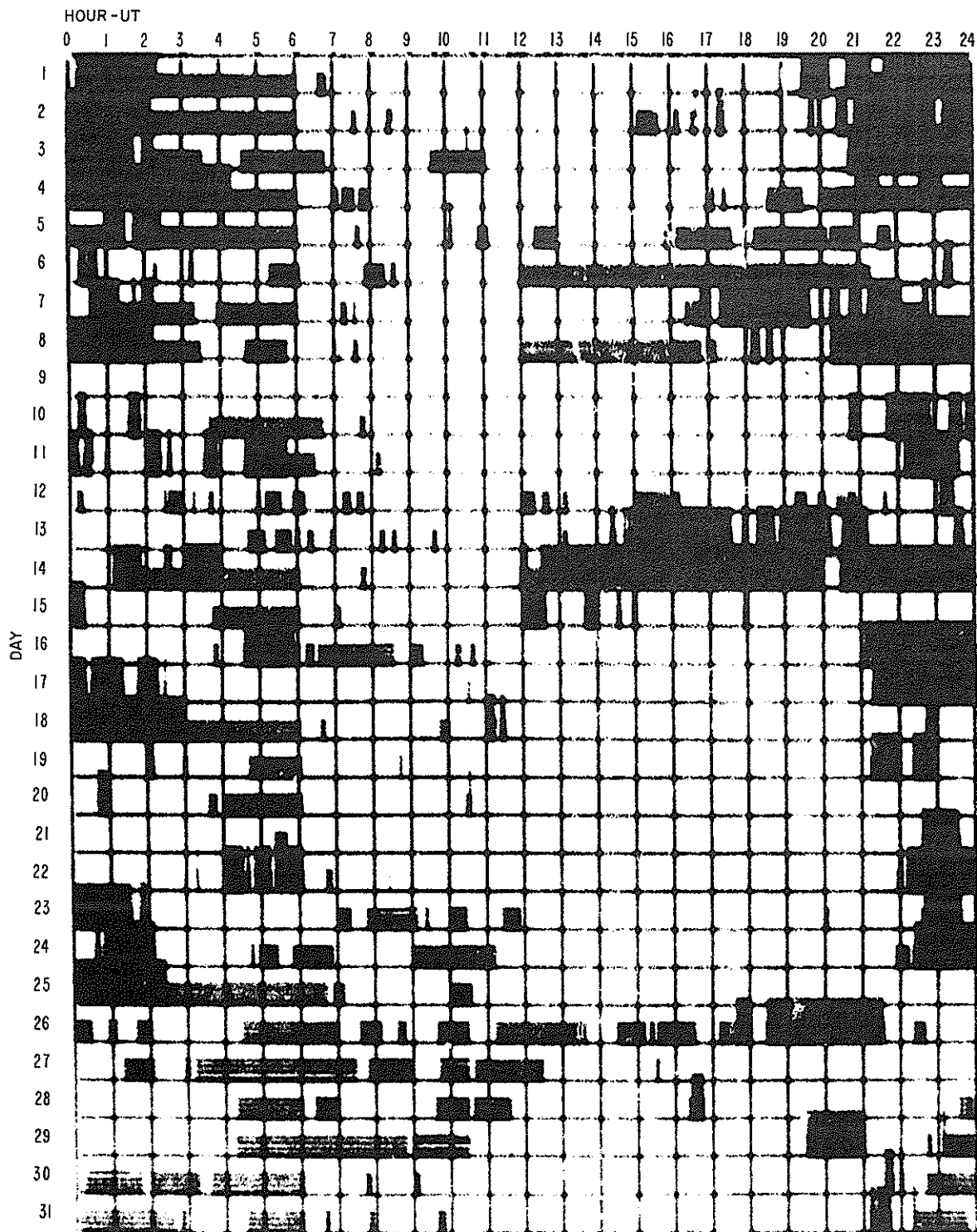
10
Aug 76

H α SOLAR FLARES

AUGUST 1976

OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IM- POR- TANCE	OBS. COND. TYPE	MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX.		CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY				TIME UT	MEAS. AREA MIL of DIA	CORR. AREA Sq. Deg.		
					LAT.	MER. DIST.											
CATA ISTA MCMA	01	0625	0625	0635	N18	E90	1.000	14352	8.0	10	1N	3		0625	56		
	01	0625		0635	N19	E90	1.000		8.0	10	SN						A
	01	1110	1113	1134	N19	E84	.997	14352	7.8	24	1N		P	1113			
MONT CATA	04	0933	0937	1004	N16	E41	.709		7.5	31	SN		C	0937	60		E
	04	0936E	0938	1015	N16	E40	.698		7.4	390	SB	3	C	0938	56	.8	
MONT CATA	05	0858E	0901	0923	S12	W90	1.000		28.6	250	SF		C	0901	20		
	05	1420	1428	1520	N13	E28	.537		7.7	60	SB	2	C	1428	67	.8	
MITK PALE ATHN MANI RAMY CATA	06	0430	0434	0505	N16	E14	.408		7.2	35	SN		C	0434	90	1.0	
	06	0433	0436U	0448U	N17	E19	.468		7.6	150	SN	2	C		92		DE
	06	0433	0437	0504	N17	E18	.458		7.5	31	SN	2	C		32		DE R
	06	0445E	0445U	0500U	N16	E16	.427		7.4	150	SN	2	P	0445	70	.8	F
	06	1135	1140	1205	N17	E30	.589		8.7	30	SN	4	C		60		DE R
	06	1135	1140	1155U	N16	E11	.382		7.3	200	SN	2		1140	84	.9	
MANI RAMY CATA	07	0200E	0200U	0203U	N13	E08	.315		7.7	30	SN	1	V	0200	60	.6	
	07	1130E	1135U	1150U	N17	W 3	.355		7.3	200	SN	4	C		45		FDE
	07	1540	1540	1550	N15	W02	.320		7.5	10	SN	2		1540	56	.6	
CATA	08	0840	0845	0900	N15	W13	.383		7.4	20	SN	2		0845	67	.7	
MCMA CATA	09	2025	2026	2030	N18	W31	.606	14352	7.5	5	SN		C	2026	50	.6	EL
	10	1025	1025	1035	N18	W39	.693		7.5	10	SN	2		1025	33	.4	
MITK MITK	13	0033	0038	0048	N26	W16	.542		11.8	15	SN		C	0038	90	1.0	E
	13	0435	0437	0440U	N25	W19	.551		11.8	50	SF		C	0437	70	.8	E
MCMA MCMA	15	1402E		1417	S03	E06	.105	14366	16.0	150	SB		C	1402	25	.3	DHT
	15	1604	1614	1624	S03	E05	.087	14366	16.0	20	SN		C	1614	25	.3	OH
MCMA MCMA MCMA PALE	18	1403	1406	1429	S07	W82	.990	14356	12.4	26	SN		C	1406			O
	18	1426	1430	1455	S03	W36	.587	14366	15.9	29	SN		C	1430	25	.3	EH
	18	1844	1845	1858	S12	E84	.994	14375	25.1	14	1B		C	1845			HV
18	1845	1851	1856	S12	E79	.981		24.7	11	SN	4	C		83			
PALE MONT MONT CATA MCMA MCMA	19	0026	0027	0034	S11	E75	.965		24.6	8	SF	3	C		31		
	19	0855	0858	0903	S05	W44	.695		16.1	8	SF		C	0858	20		
	19	0916E	0917	0923	S05	W44	.695		16.1	70	SF		C	0917	40		E
	19	0920	0920	0925	S06	W44	.695		16.1	5	SN	2	C	0920	28	.4	
	19	1157	1207	1216	S14	E70	.940	14375	24.7	19	SN		C	1207	40	1.6	E
	19	1831	1834	1842	S14	E67	.922	14375	24.8	11	SF		C	1834	30	1.1	E
MONT	21	0803	0807	0813	S03	W74	.961		15.8	10	SF		C	0807	40		E
MITK MITK UPIC UPIC RAMY RAMY UPIC	22	0127	0129	0138	S04	W90	1.000	14366	15.3	11	1N		C	0129	60		
	22	0206E	0209	0219	S04	W90	1.000	14366	15.3	130	1F		C	0209	70		
	22	0730	0735	0745	S11	E43	.690		25.5	15	SF		P	0735	61		
	22	0820	0825	0900	S11	E43	.690		25.6	40	SF		P	0825	41		
	22	1021E	1115	1140U	S 6	W90	1.000		15.7	790	SN	4	V				
	22	1021E	1115	1140U	S 7	W90	1.000		15.7	790	SN	4	C				
22	1217E		1222U	S02	W90	1.000		15.8	50	N		P	1217			AB	
MCMA	31	1958E	2005	2038	N19	W54	.834	14403	27.8	400	SN		C	2005	50	.9	E

INTERVALS OF NO FLARE PATROL OBSERVATION
FOR PRECEDING SOLAR FLARE TABLE
AUGUST 1976



Observatories included in total patrol:

Athenes	Herstmonceux	McMath-Hulbert	Palehua	Upice
Bucharest	Istanboul	Mitaka	Ramey	Wendelstein
Catania	Manila	Monte Mario	Tehran	

Times of no flare patrol are shown by the shaded area for each day divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

12
Aug 76

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATION

AUGUST 1976

Nangay

169 MHz

5

BECAUSE OF CALIBRATION PROBLEMS IN THE OBSERVING EQUIPMENT
NO NANÇAY CHART WILL BE PUBLISHED FOR AUGUST 1976.

10

15

20

25

30

E

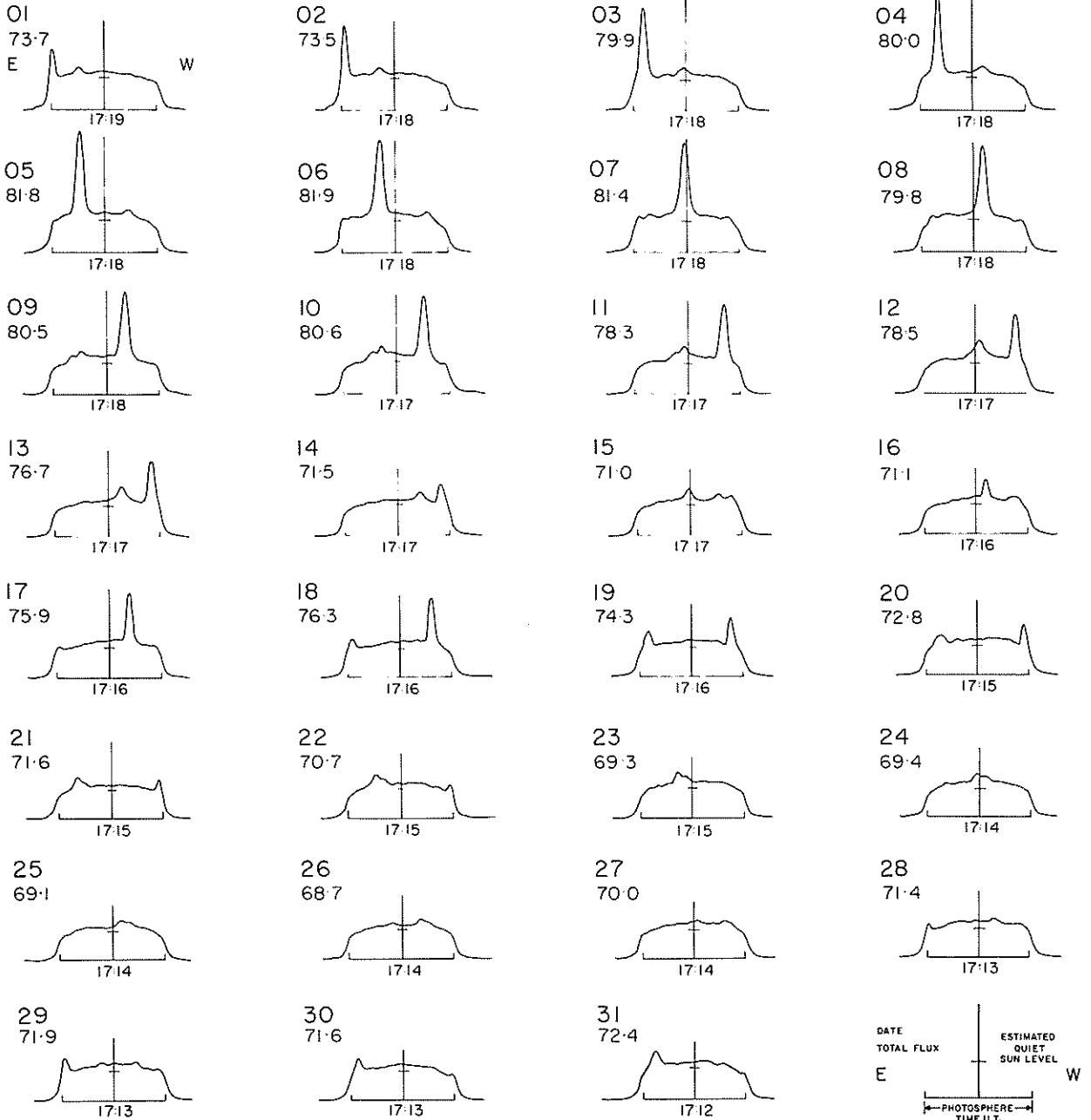
C

W

EAST-WEST SOLAR SCANS
AUGUST 1976

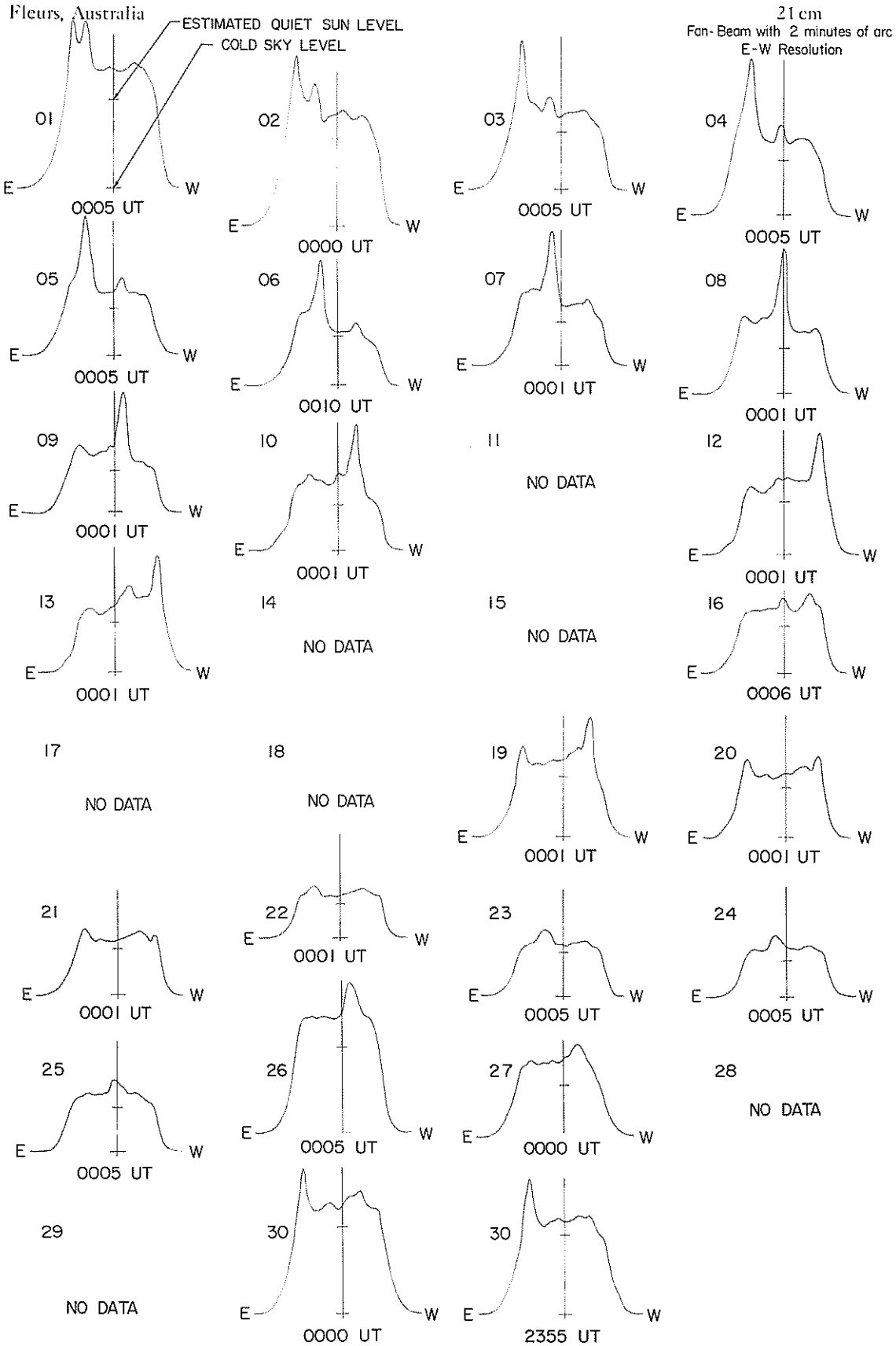
ALGONQUIN RADIO OBSERVATORY
CANADA

10.7cm
Fan Beam with 1.5 minutes of arc
E-W Resolution



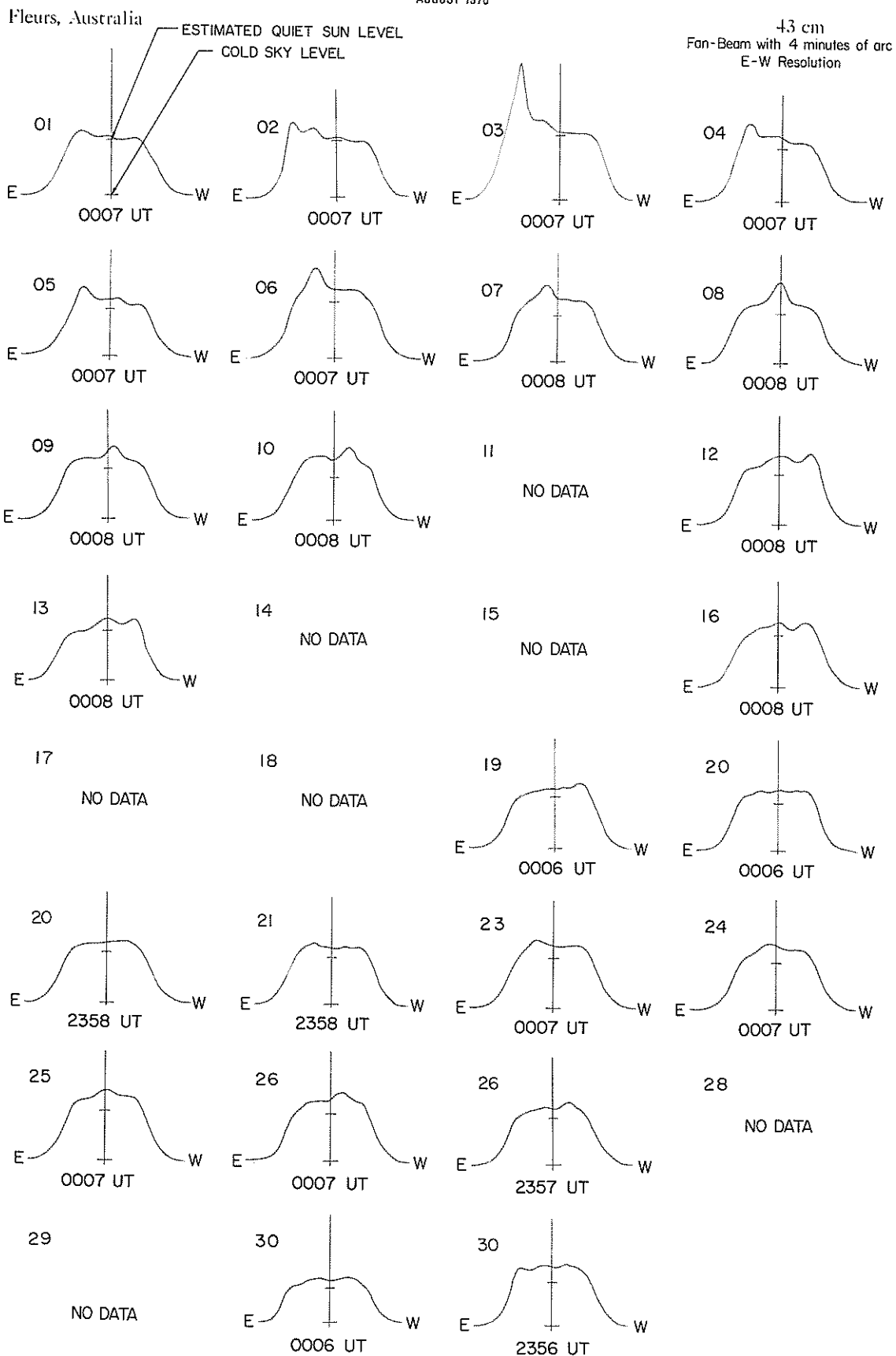
14
Aug 76

EAST-WEST SOLAR SCANS
AUGUST 1976



EAST-WEST SOLAR SCANS

AUGUST 1976



16
Aug 76

SOLAR RADIO EMISSION SELECTED FIXED FREQUENCY EVENTS

AUGUST 1976

	FREQUENCY STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY		INT	REMARKS	
			UT	UT	MINUTES	$10^{-22} \text{ Wm}^{-2} \text{ Hz}^{-1}$ PEAK	MEAN			
1	2800 OTTA	21 GRF	2155	2330	215	2.2	1.1			
	2800 OTTA	1 S	2222	2222.7	2	0.8	0.4			
2	2695 PENT	1 S	1156.5	1156.6	1	1.2	0.5			
	2800 OTTA	21 GRF	2229	2239	27	1.4	0.7			
	2800 OTTA	1 S	2234.5	2235.3	2	2	1			
	2695 BOUL	1 S	2235	2236	2.5	4	1			
	2800 OTTA	8 S	2242.5	2242.5	0.5	1.4	0.7			
	2800 OTTA	1 S	2249.8	2250	1.5	1	0.5			
3	2695 BOUL	45 C	0102	0105.5	7	6	2			
	2695 PENT	24OAR	1227	1234	7	1.2	0.6			
	2695 PENT	2 S/F	1227	1230.2	5	2.2	1.1			
	2695 PENT	24P R	1234		96	1.2				
	2695 PENT	24O R	1410	1530	80	1.5	0.8			
	2695 PENT	24P R	1530		450 D	1.5				
	2695 BOUL	3 S	1533	1534	4.5	4	1			
	2695 BOUL	8 S	1716	1716.5	1	12	4			
	2695 BOUL	8 S	1721.5	1722.5	1.5	15	5			
	2695 BOUL	45 C	1747	1748	3.5	8	3			
	2695 BOUL	8 S	1752	1752.5	1	3	1			
	2695 BOUL	8 S	1808	1808.5	1.5	15	5			
	2695 BOUL	40 F	1859	1900	4	23	7			
	2695 BOUL	40 F	1928.5	1931.5	6.5	53	19			
	2695 BOUL	45 C	2255.5	2257.5	8.5	15	5			
	2800 OTTA	20 GRF	2320	2340	50	1.2	0.6			
	2695 BOUL	40 F	2326.5	2328	5.5	17	6			
	5	2800 OTTA	22 GRF	1412	1421	80	4.8	2.4		
		2800 OTTA	22 GRF	2054	2058	65	1.6	0.8		
	6	2695 MANI	2	0430	0432.3	10.5	7	2.8		
2695 PENT		1 S	1106	1107	2	2.4	1			
2695 PENT		21 GRF	1130	1136	35	2.4	1.2			
2695 PENT		40 F	1134.2	1134.7	3	4.8				
2695 PENT		40 F	1305	1313	13	17.4				
7	2800 MANI	4	0158.5	0200	3	12.6	2.5			
	2695 MANI	4	0154.5	0159.3	5.8	15.3	5.1			
11	2800 OTTA	32 ABS	1408	1432	55	-1.2	-0.6			
13	2695 PENT	21 GRF	1145	1230	130	1.4	1			
	2695 PENT	1 S	1148	1152	6	2	1.5			
	2695 PENT	22 GRF	1420	1440	210	2.8	2			
18	2800 OTTA	20 GRF	1426	1430	25	1.4	0.7			
	2800 OTTA	3 S	1843.5	1844.7	4.5	32	8			
	2695 BOUL	8 S	1844	1845	4.5	28	9			
	2800 OTTA	31 ABS	1848	1905	87	-1				
	2695 BOUL	31 ABS	1848.5	1850.5	14.5	2	1			
21	2695 PENT	1 S	1118.5	1121	5	2	1.2			
	2695 PENT	22 GRF	1308	1310	12	1.2	0.6			
22	2695 PENT	46F C	1158	1211.5	32	152				
	2695 PENT	29 PBI	1230	1230	58	7.4	2.5			
26	2695 BOUL	3 S	1657.5	1659.5	2	12	4			
	2695 BOUL	1 S	1733.5	1734	1.5	3	1			

Observatories:

BOUL = Boulder

MANI = Manila

OTTA = Ottawa ARO

PENT = Penticton

Explanation of Type Code:

1 Simple 1	6 Minor	22 Simple 3F	27 Rise and Fall	32 Absorption	44 Noise Storm in Progress
2 Simple 1F	7 Minor +	23 Simple 3AF	28 Precursor	40 Fluctuation	45 Complex
3 Simple 2	8 Spike	24 Rise	29 Post Burst Increase	41 Group of Bursts	46 Complex F
4 Simple 2F	20 Simple 3	25 Rise A	30 Post Burst Increase A	42 Series of Bursts	47 Great Burst
5 Simple	21 Simple 3A	26 Fall	31 Post Burst Decrease	43 Onset of Noise Storm	48 Major
					49 Major +

SOLAR WIND
Interplanetary Scintillations
AUGUST 1976

U.C.S.D. Solar Wind Speeds (observed by Interplanetary Scintillations at 74 MHz): These observations will not be published until further notice. A systematic difference has been found between speeds observed to the east and to the west of the sun. The data for the whole of 1976 are being reanalyzed and will be published as soon as possible.

SOLAR X-RAYS BY SATELLITE
SMS GOES

AUGUST 1976

1 - 8Å Hourly Averages (10^{-4} watts/m²)

MO DA	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
8/ 1	M	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/ 2	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/ 3	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/ 4	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/ 5	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/ 6	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/ 7	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/ 8	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/ 9	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/10	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/12	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/16	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/17	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/18	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/19	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/20	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/21	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/22	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/23	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/24	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/25	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/26	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/27	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/28	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/29	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/30	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8/31	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B

Note: "B" indicates the flux was below the cut-off levels.
"M" denotes periods of missing data.

20
Aug 76

SOLAR X-RAYS BY SATELLITE

GOES-1

AUGUST 1976

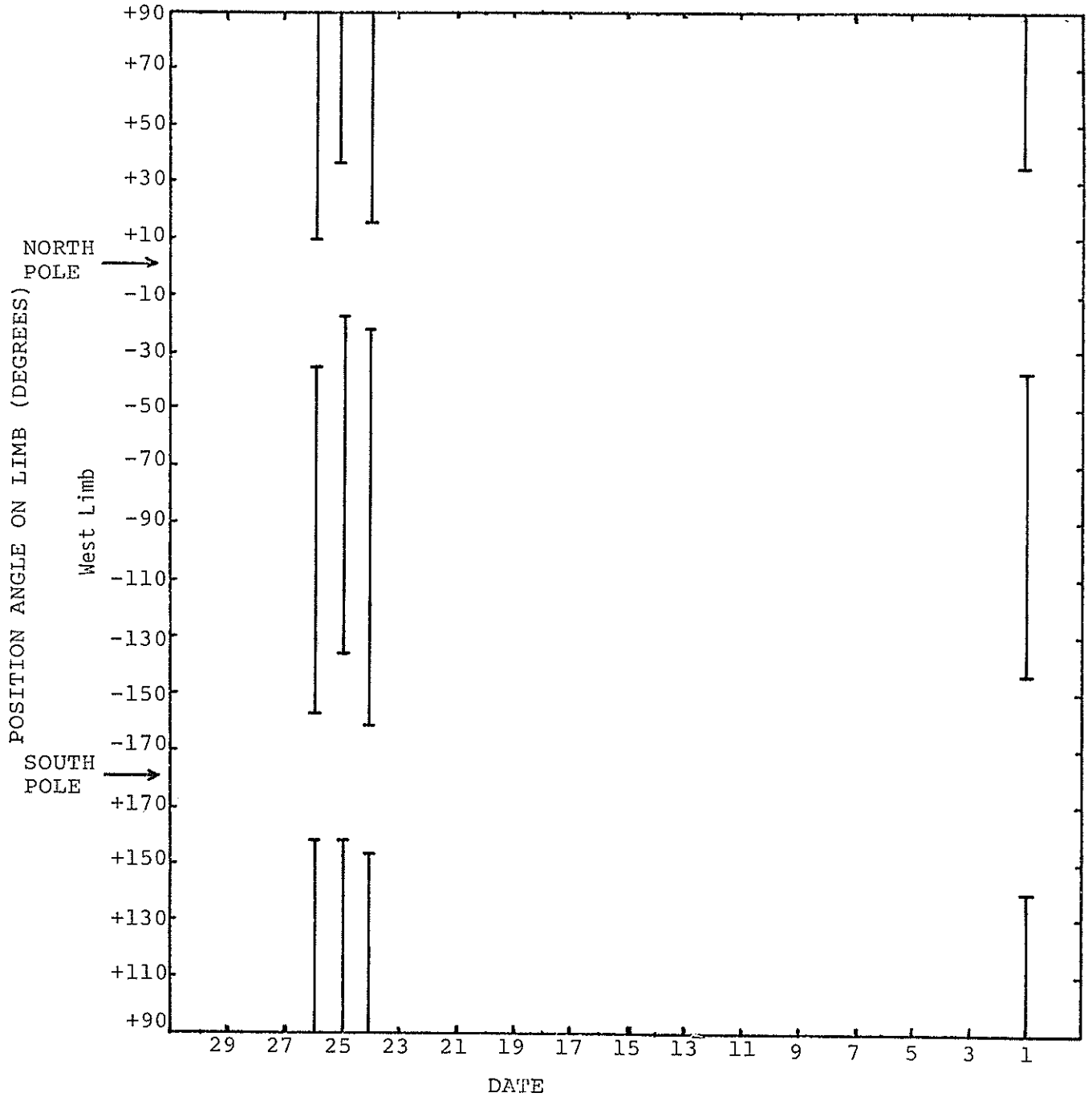
DAY	BEGIN TIME	.5-4A Wm ⁻²	1-8A Wm ⁻²	MAX TIME	.5-4A Wm ⁻²	1-8A Wm ⁻²	1/2P TIME	.5-4A Wm ⁻²	1-8A Wm ⁻²
18	1840		4.4E-08	1847	2.6E-06	1.7E-05	1851		6.8E-06
22	1049		1.6E-08	1208	3.3E-06	2.7E-05	1219		1.3E-05

CORONAL HOLES

Helium D3 Chromosphere at Solar Limb

AUGUST 1976

OBSERVATIONS OF D3 CHROMOSPHERE AT SOLAR LIMB



INFERRED IP MAGNETIC FIELD

BARTELS ROTATION	DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1936	FEB 23	TAA	AA	AA	AA	ATA	ATA	AA	AA	AA	ATT	AA	AA	AA	AA	TT	TT	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA
1937	MAR 22	AA	AA	TAA	TA	AA	AA	AA	ATA	AA	AA	AA	TA	TA	TT	TT	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA
1938	APR 18	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
1939	MAY 15	TT	AA	TA	TA	AA	AA	TA	TA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
1940	JUN 11	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	TA	TA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
1941	JUL 8	AA	AA	AA	AA	TA	AA	AA	TA	TA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
1942	AUG 4	AA	AA	AA	AA	TA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
1943	AUG 31	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
1944	SEP 27	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
1945	OCT 24	TT	TT	TT	TT	TA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
1946	NOV 20	TA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
1947	DEC 17	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT
1948	1976 JAN 13	TAT	TT	TT	TT	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA
1949	FEB 9	TA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
1950	MAR 7	TA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
1951	APR 3	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT
1952	APR 30	TT	AT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT
1953	MAY 27	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT
1954	JUN 23	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT
1955	JUL 20	TA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
1966	AUG 16	AA	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT	TT

T = towards the sun A = away from the sun * = effect doubtful or not discernible - = missing data

The table shows daily inferences of the polarity of the interplanetary magnetic field. The first half of the day is based principally on magnetograms produced by the magnetometer at the Vostok Antarctic Station of the USSR. The magnetometer of the U.S. Air Weather Service operated by the Air Force Geophysics Laboratory at the Thule Geopole Station is used for the second half of the day.

Note: Inferred IMF data for August 1976 based on the Vostok Station have not been received at time of publication.

JULY 1976 DATA

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H α SYNOPSIS CHART

JUNE 1976 - JULY 1976

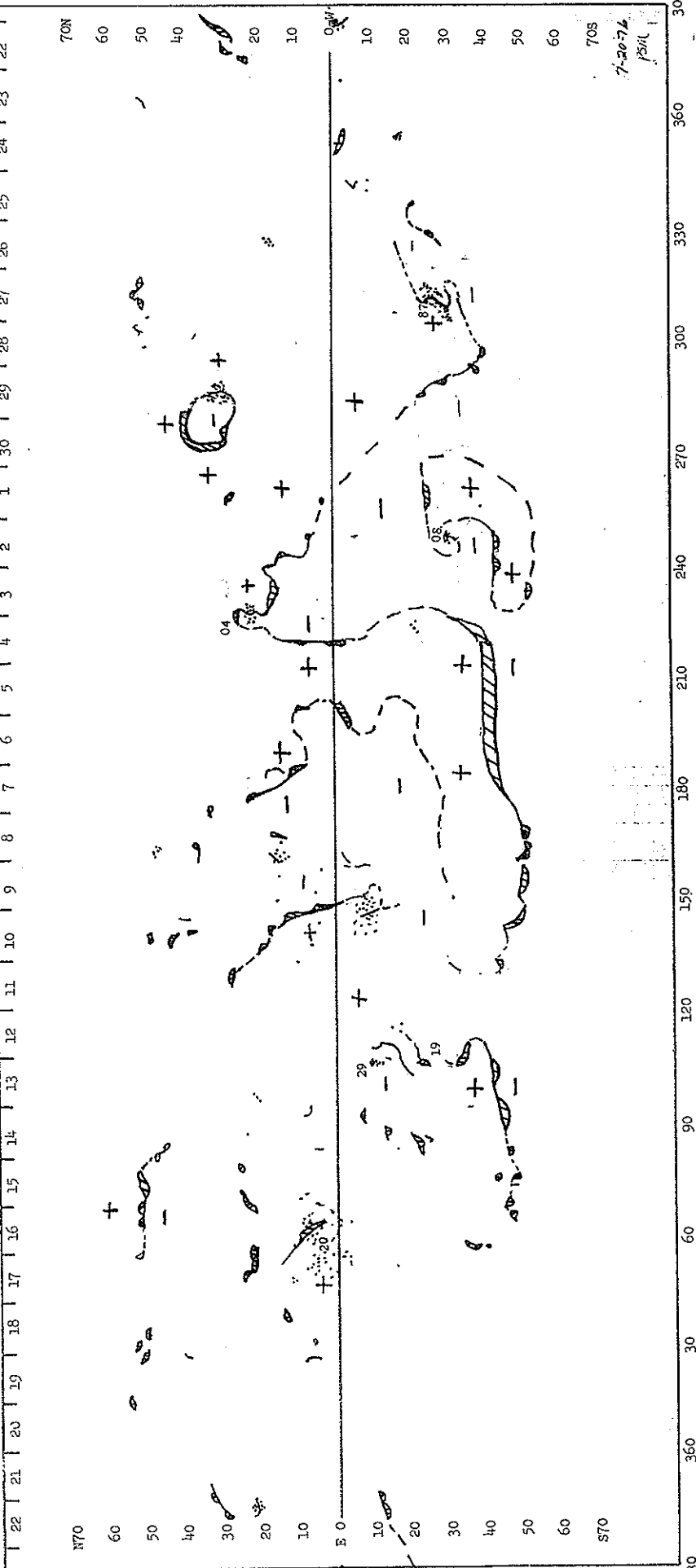
JULY 1976

CARRINGTON ROTATION 1643 (preliminary)

CARRINGTON ROTATION 1643 (preliminary)

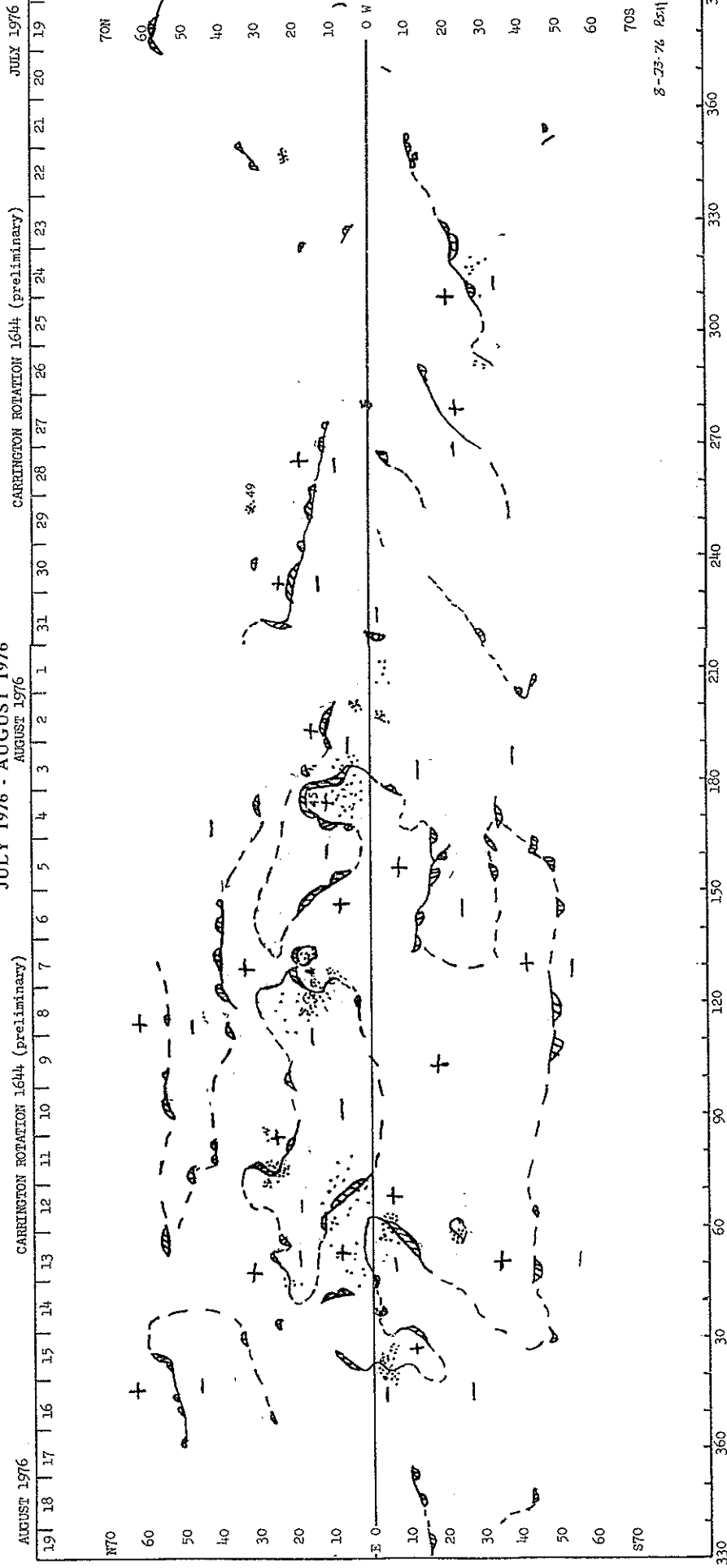
JUNE 1976

JULY 1976

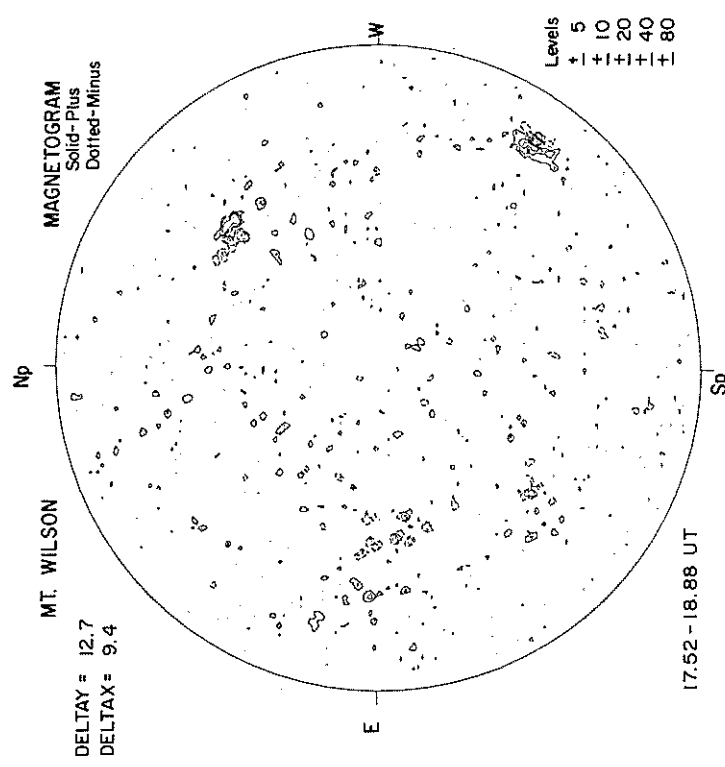
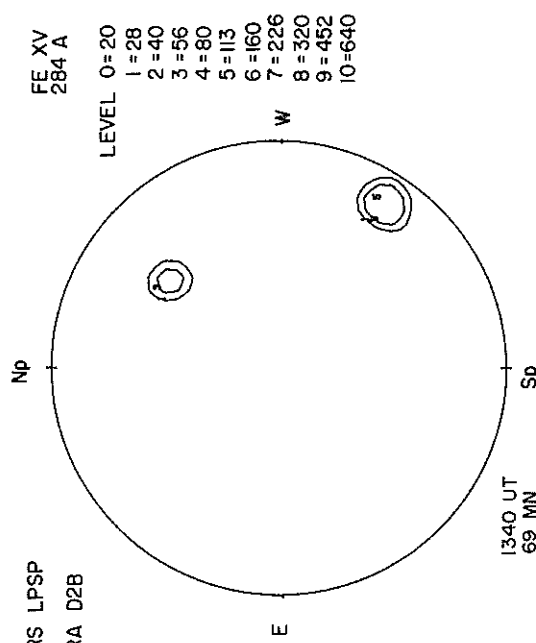
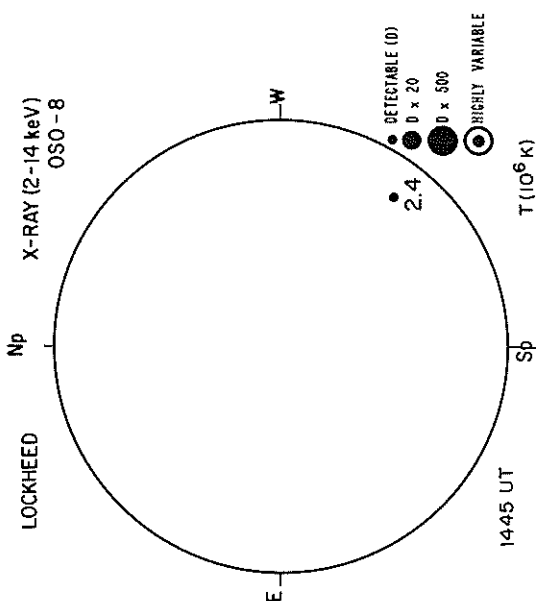


H α SYNOPSIS CHART

JULY 1976 - AUGUST 1976
AUGUST 1976

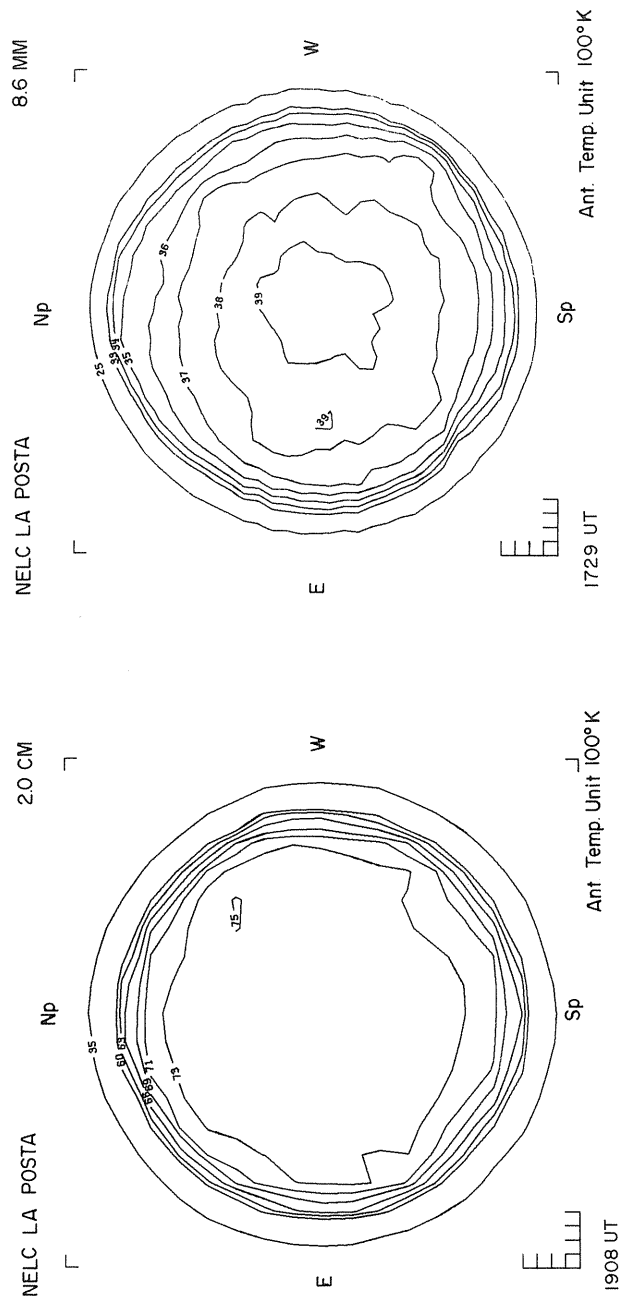
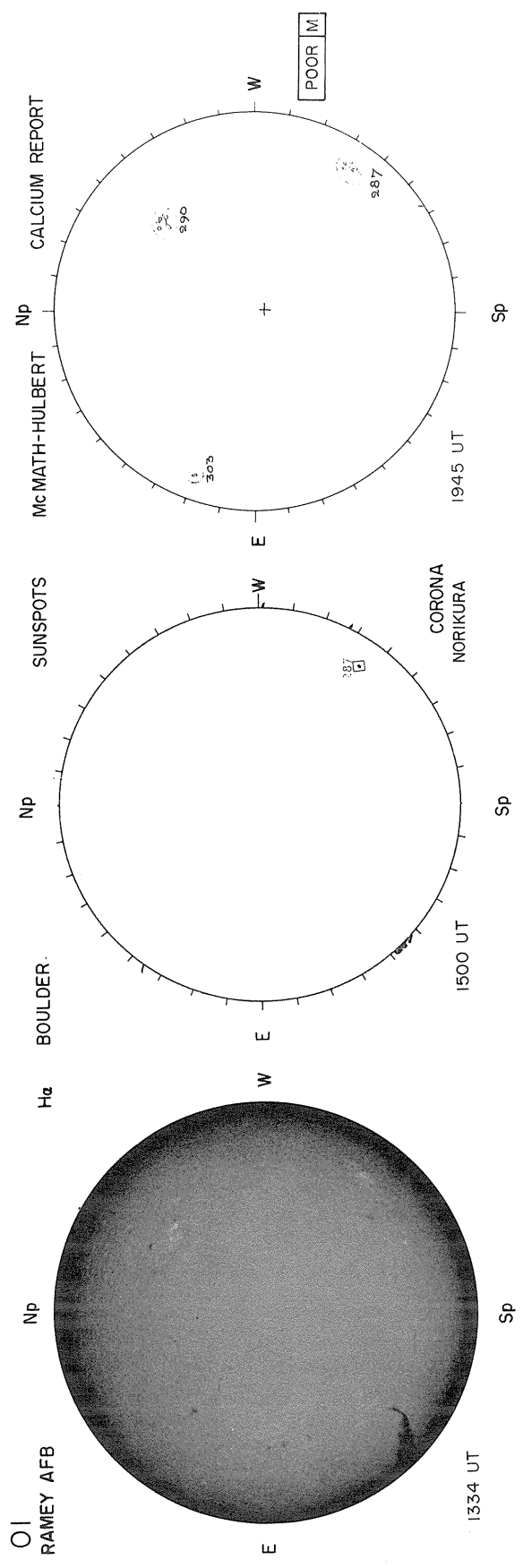


JULY 1, 1976 (P = -2.63, B₀ = 2.92, L₀ = 266.65)



NO MAGNETOGRAMS WERE PRODUCED AT KITT PEAK OBSERVATORY DURING THE MONTH OF JULY 1976.

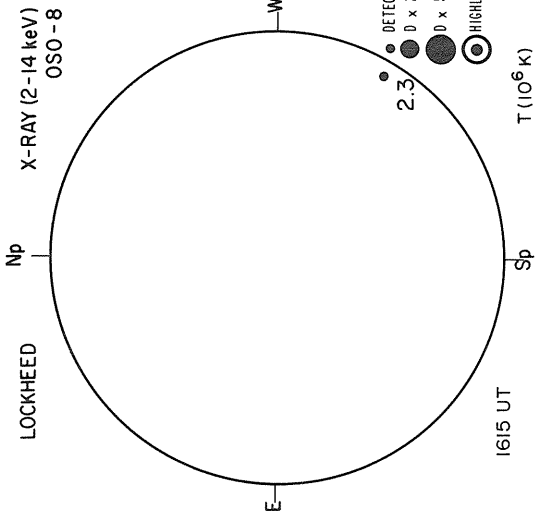
Sp



Ant. Temp. Unit 100°K

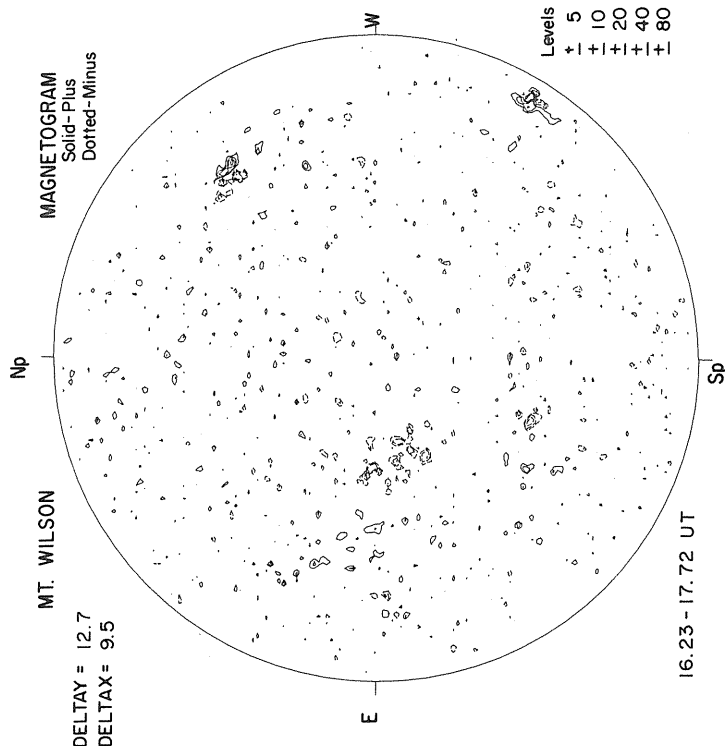
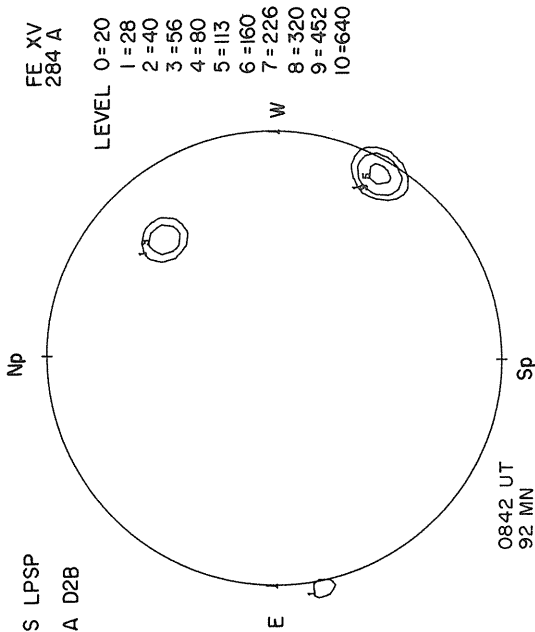
Ant. Temp. Unit 100°K

JULY 2, 1976 (P = -2.18, B₀ = 3.03, L₀ = 253.42)

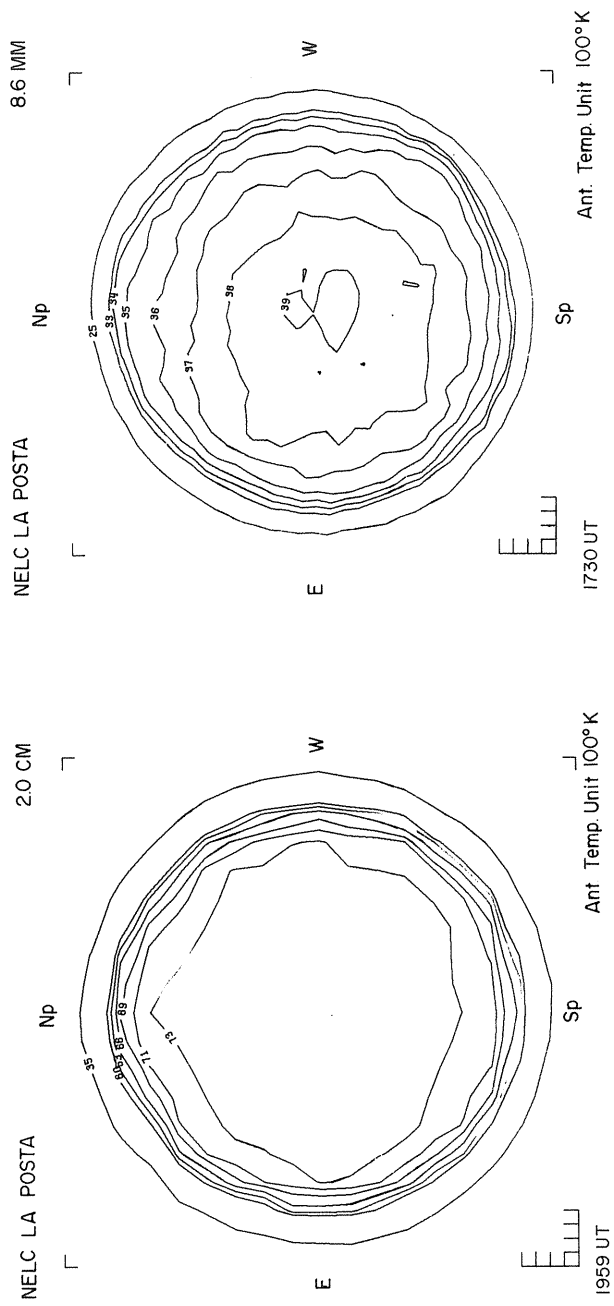
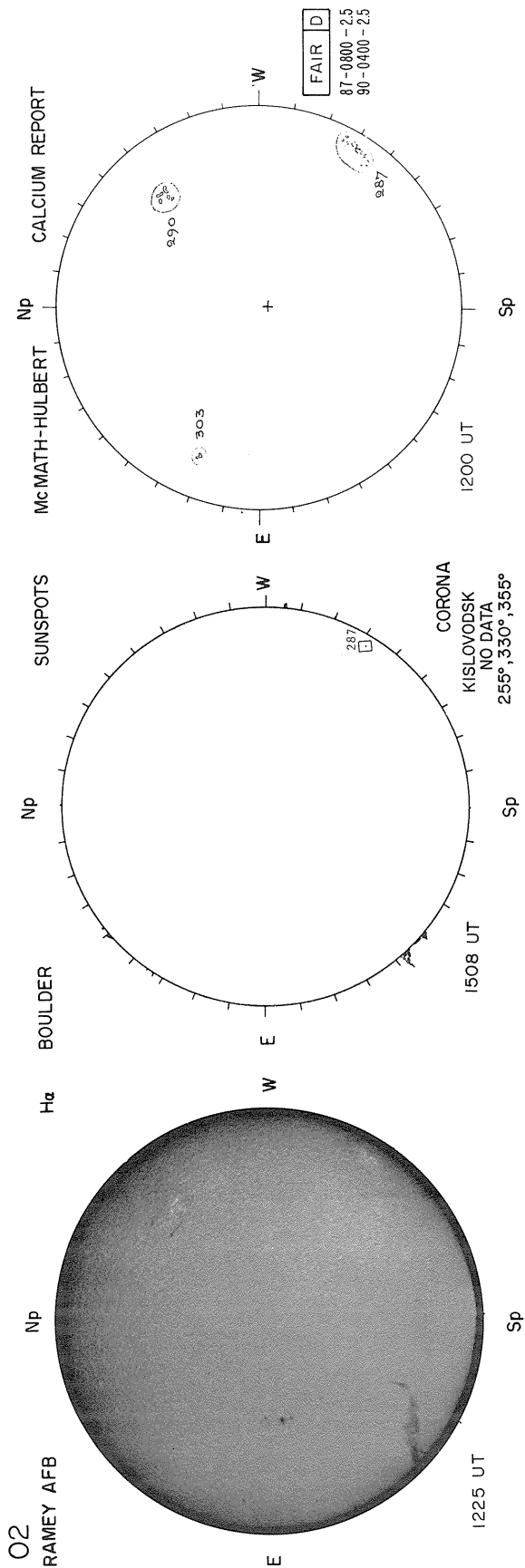


2.3
 ● DETECTABLE (D)
 ○ 0 x 20
 ● 0 x 500
 ⊙ HIGHLY VARIABLE
 T (10⁶ K)

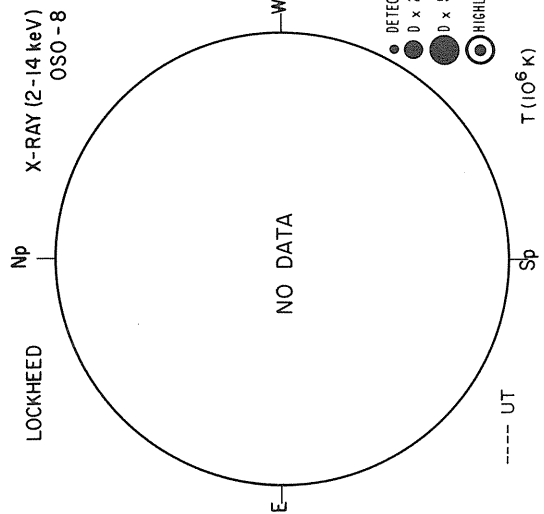
KITT PEAK
 MAGNETOGRAM
 Bright-Plus
 Dark-Minus



Sp



JULY 3, 1976 (P = -1.73, B₀ = 3.14, L₀ = 240.18)

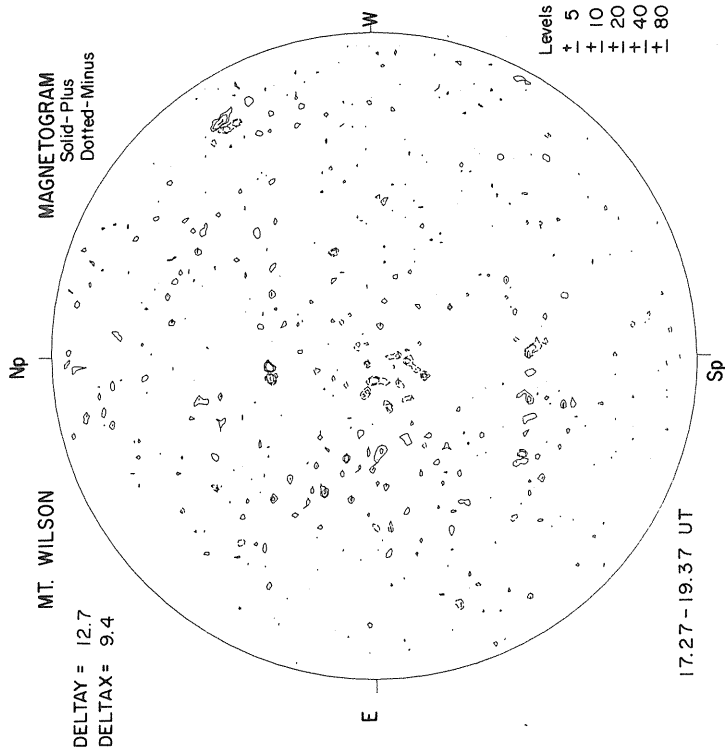
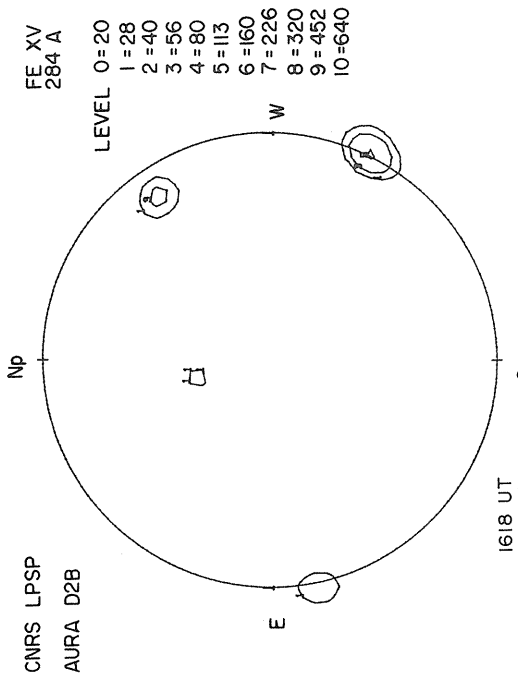


● DETECTABLE (D)
○ 0 x 20
○ 0 x 500
○ HIGHLY VARIABLE

T (10⁶ K)

MAGNETOGRAM
Bright - Plus
Dark - Minus

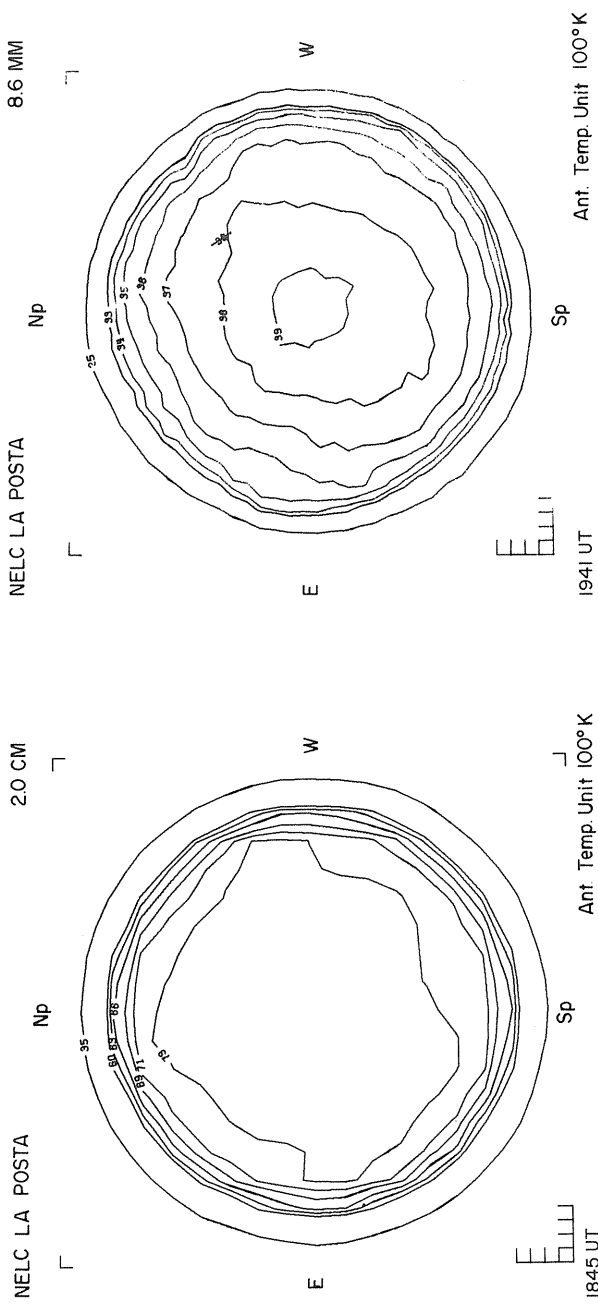
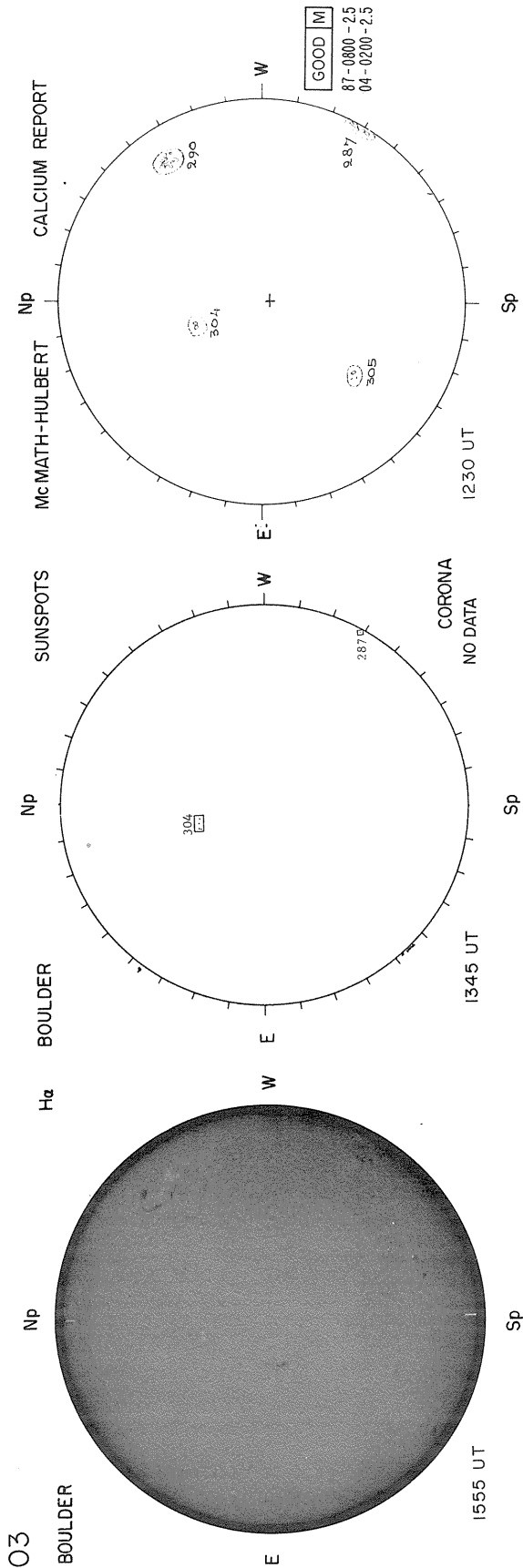
KITT PEAK



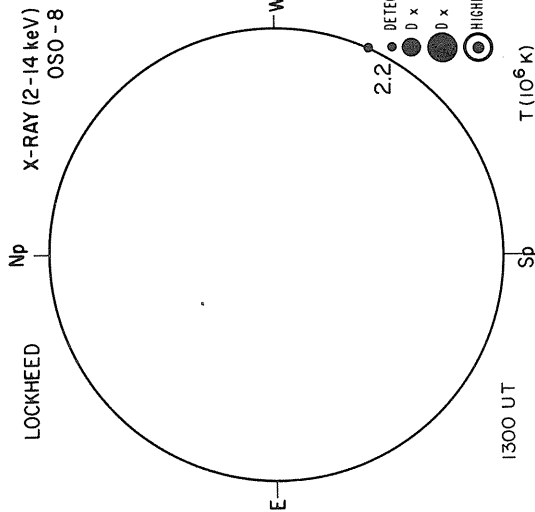
Sp

E

W

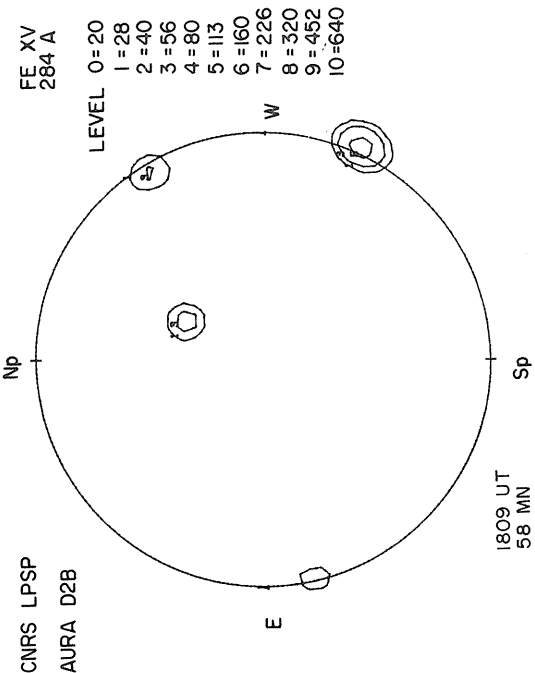


JULY 4, 1976 (P = -1.27, B₀ = 3.25, L₀ = 226.94)



KITT PEAK

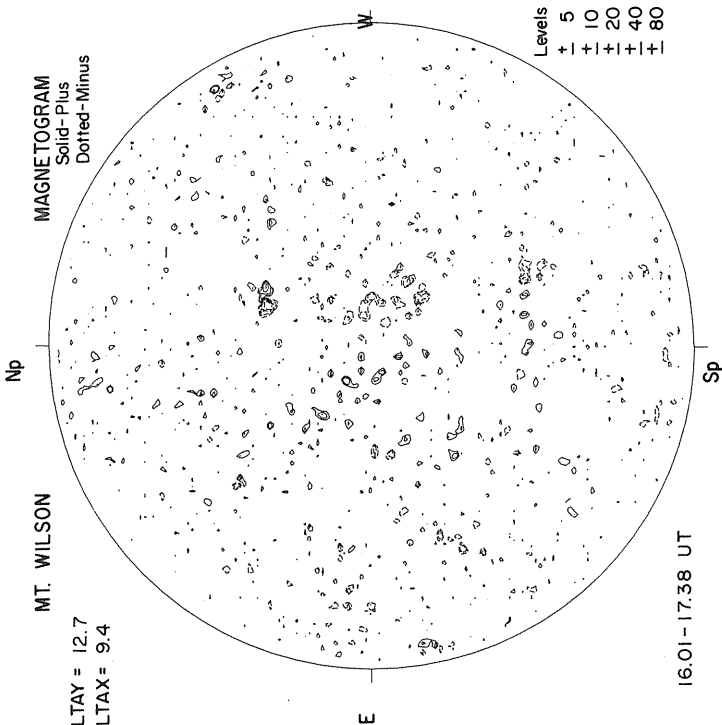
MAGNETOGRAM
Bright - Plus
Dark - Minus



MT. WILSON

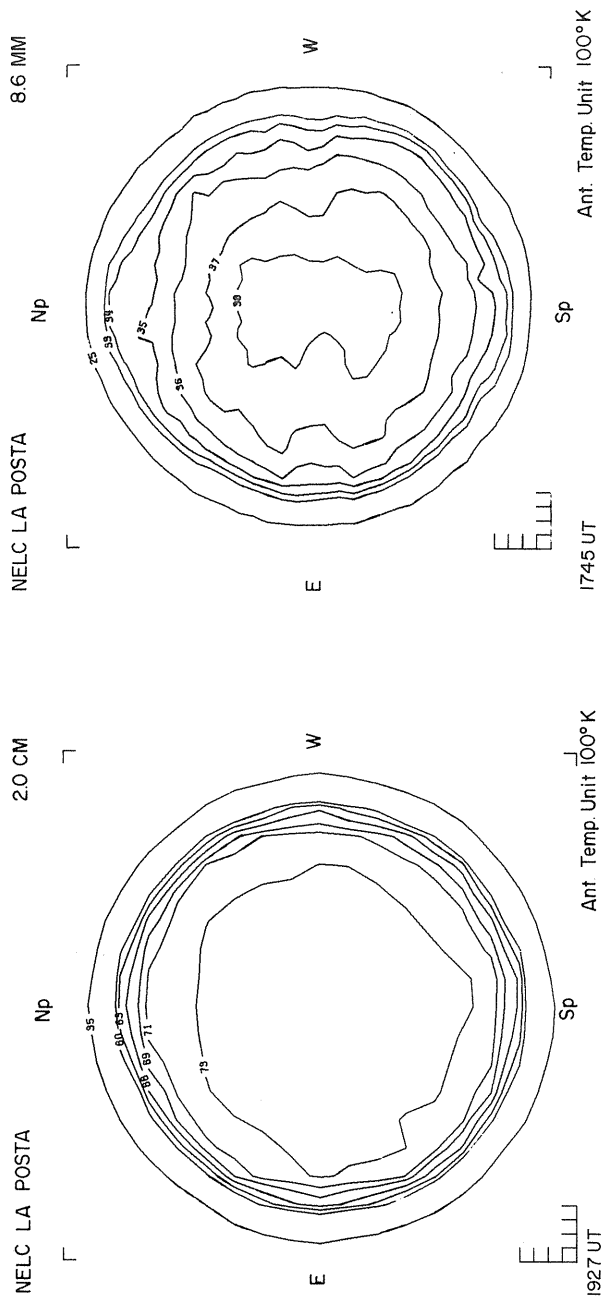
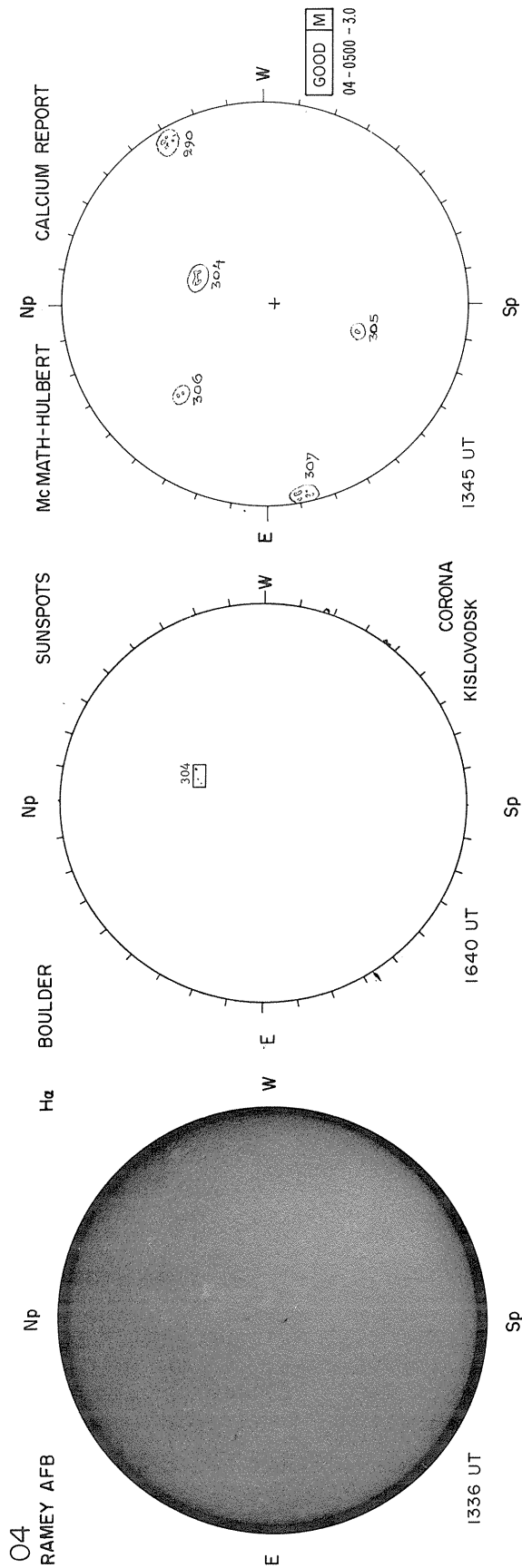
MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTA Y = 12.7
DELTA X = 9.4

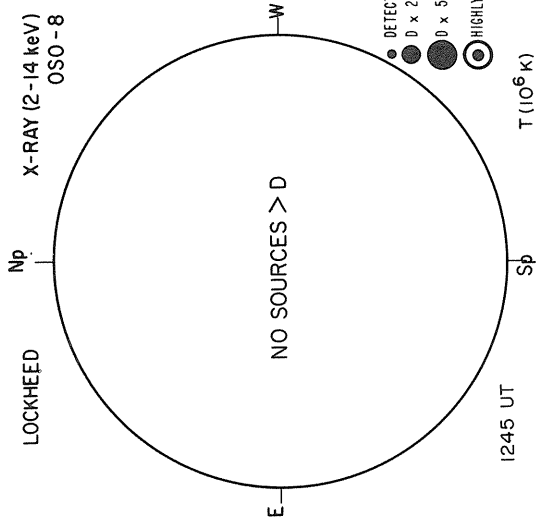


Sp

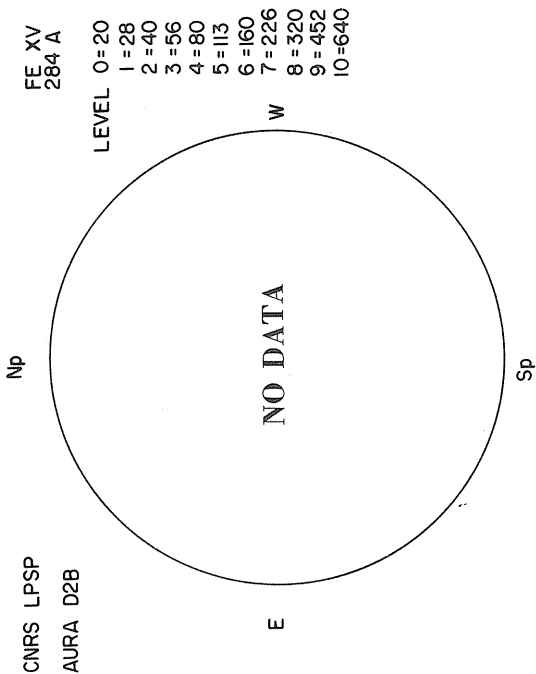
E



JULY 5, 1976 (P = -0.82, B₀ = 3.36, L₀ = 213.71)

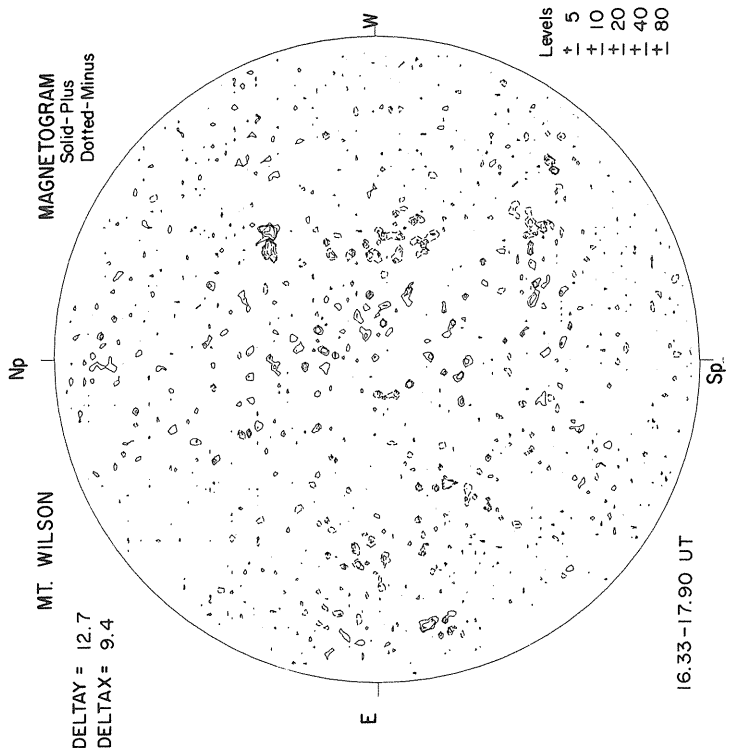


- DETECTABLE (D)
- D x 20
- D x 500
- ⊙ HIGHLY VARIABLE

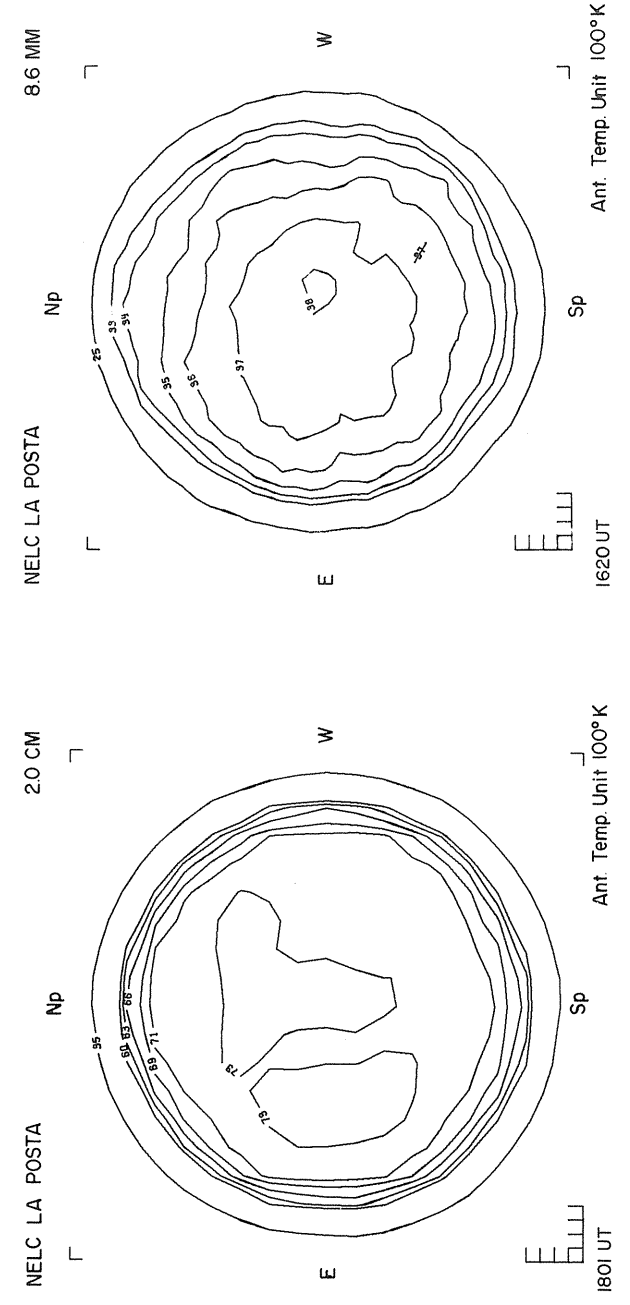
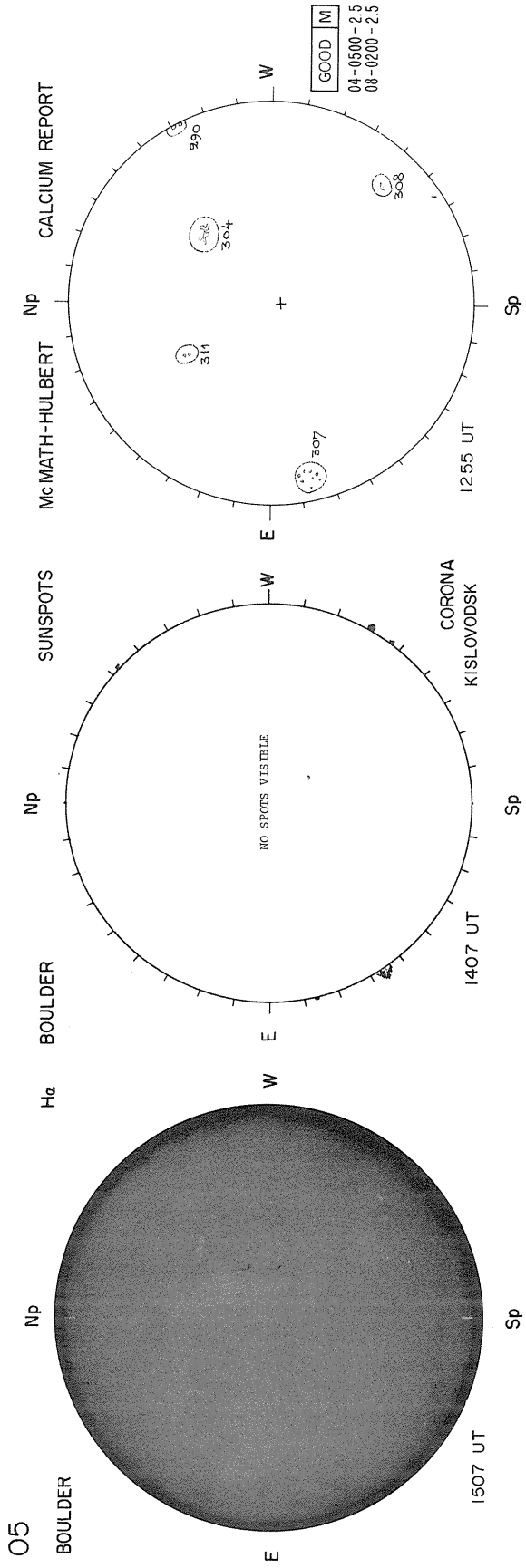


- LEVEL
- 0 = 20
 - 1 = 28
 - 2 = 40
 - 3 = 56
 - 4 = 80
 - 5 = 113
 - 6 = 160
 - 7 = 226
 - 8 = 320
 - 9 = 452
 - 10 = 640

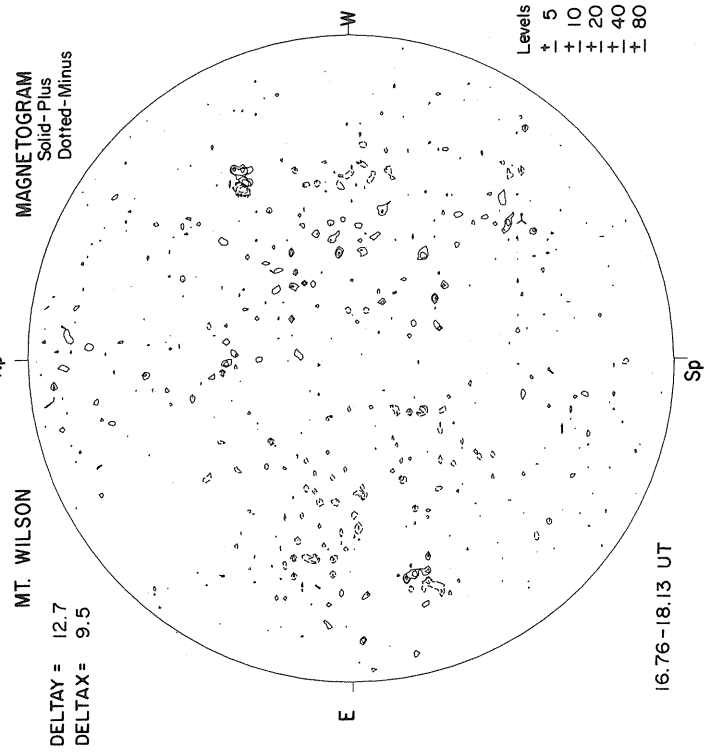
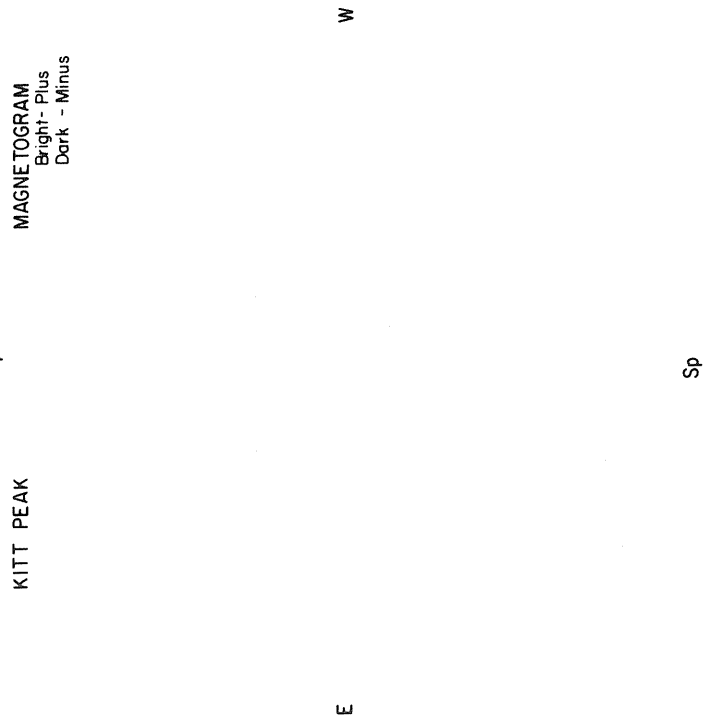
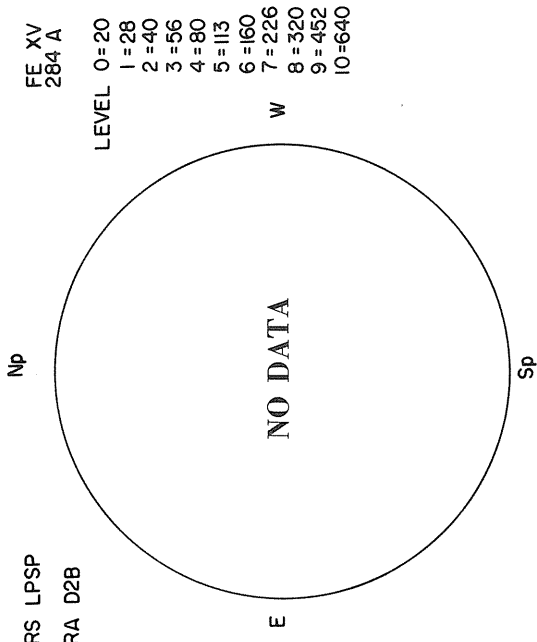
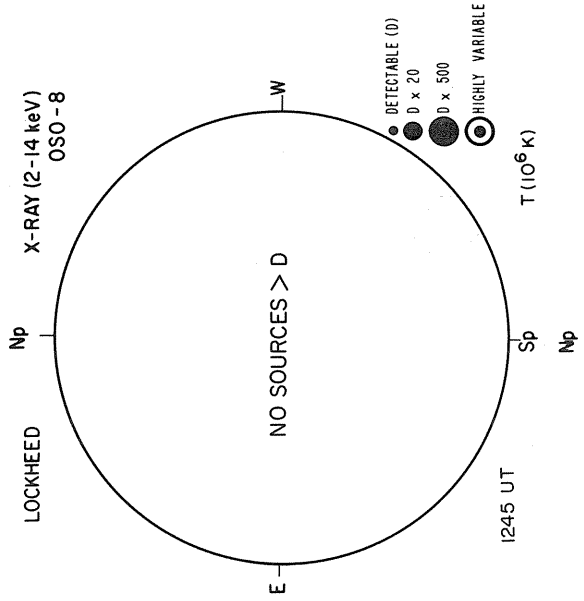
KITT PEAK
MAGNETOGRAM
Bright - Plus
Dark - Minus



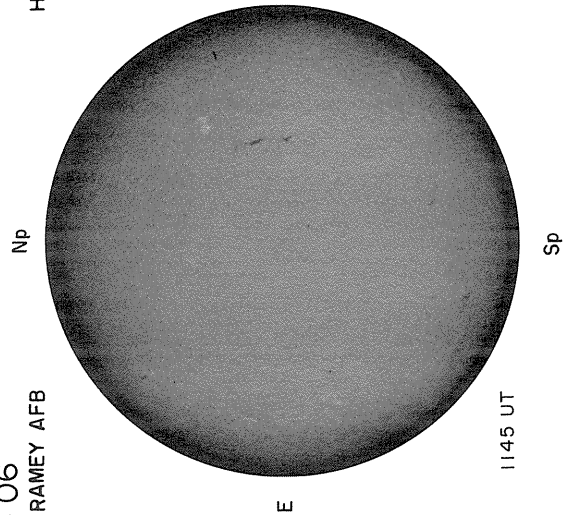
- Levels
- 5
 - + 10
 - + 20
 - + 40
 - + 80



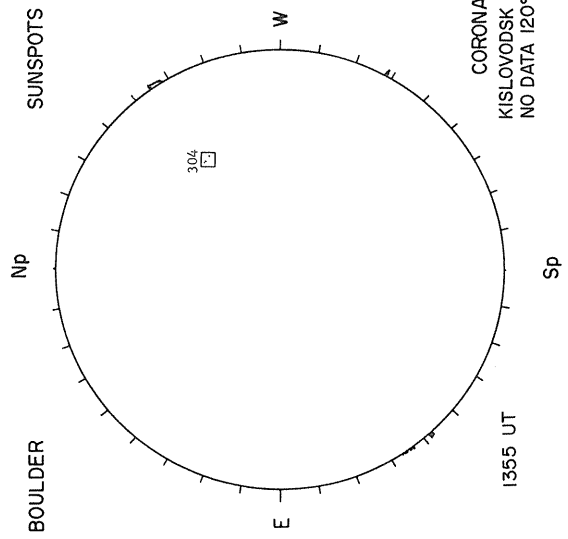
JULY 6, 1976 (P = -0.36, B₀ = 3.47, L₀ = 200.47)



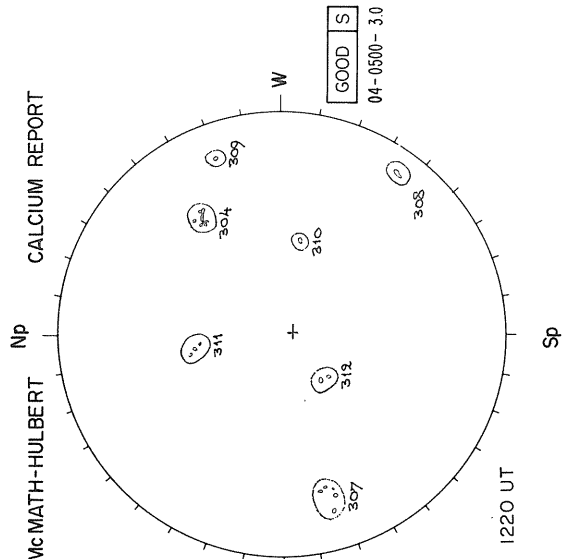
06
RAMEY AFB



H α BOULDER



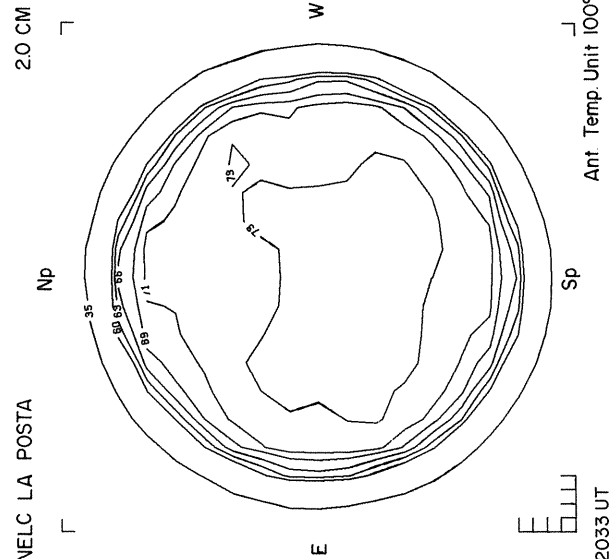
McMATH-HULBERT



CALCIUM REPORT

CORONA
KISLOVODSK
NO DATA 120°, 175°

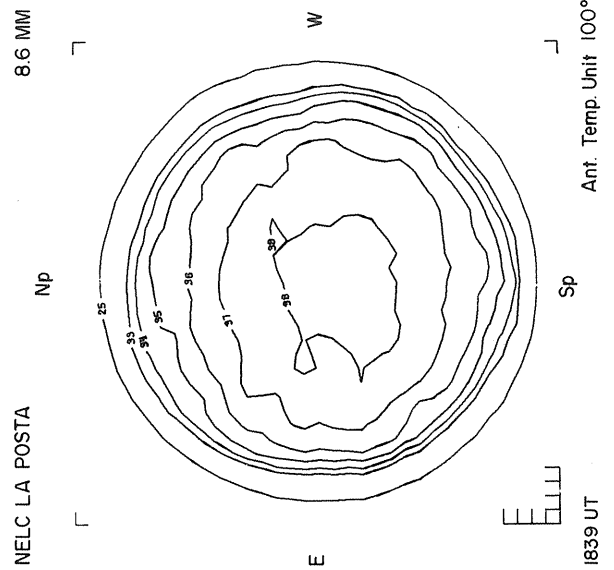
NELC LA POSTA



2.0 CM

Ant. Temp. Unit 100°K

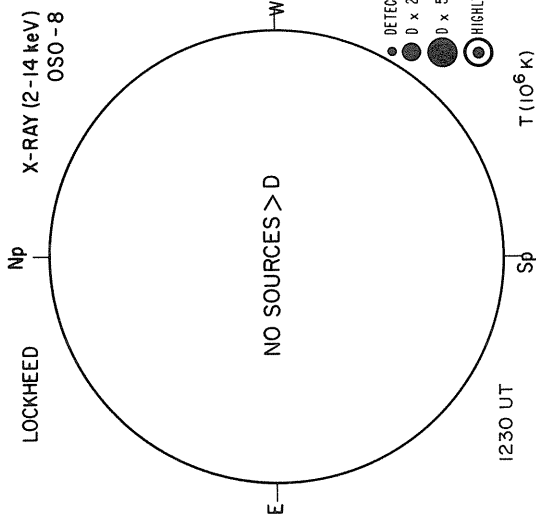
NELC LA POSTA



8.6 MM

Ant. Temp. Unit 100°K

JULY 7, 1976 (P = 0.09, B₀ = 3.57, L₀ = 187.24)

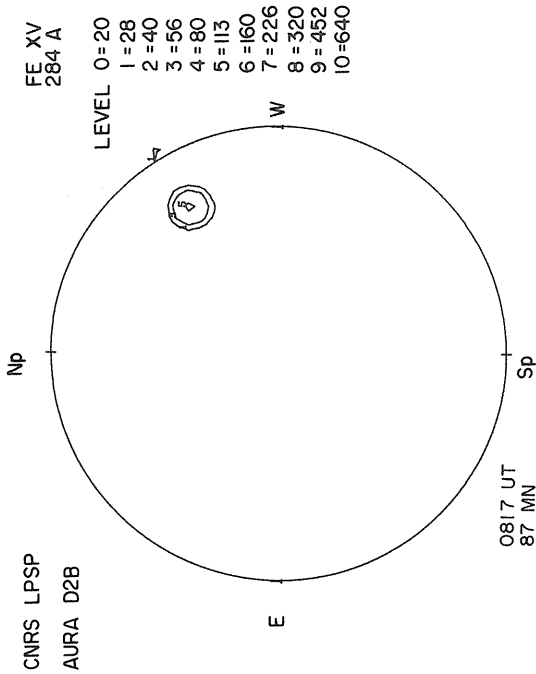


T (10⁶ K)

- DETECTABLE (D)
- 0 x 20
- 0 x 500
- HIGHLY VARIABLE

KITT PEAK

MAGNETOGRAM
Bright - Plus
Dark - Minus



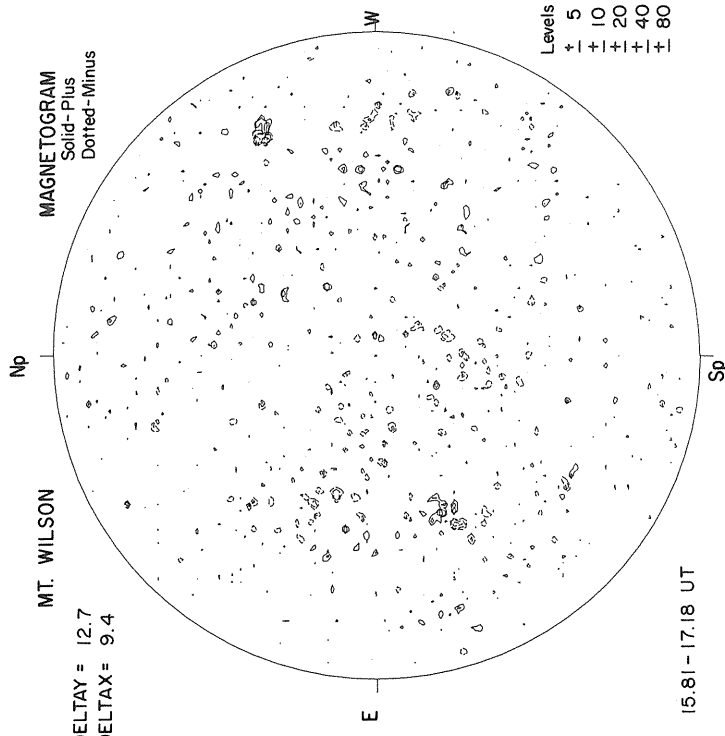
FE XV 284 A

LEVEL 0=20
1=28
2=40
3=56
4=80
5=113
6=160
7=226
8=320
9=452
10=640

MT. WILSON

MAGNETOGRAM
Solid - Plus
Dotted - Minus

DELTA Y = 12.7
DELTA X = 9.4

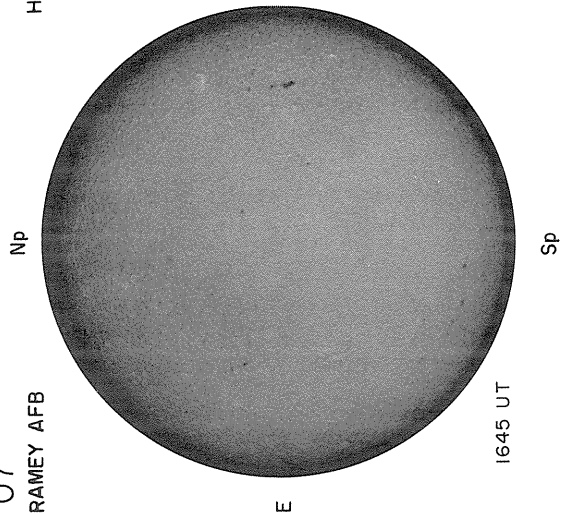


Levels
5
+ 10
+ 20
+ 40
+ 80

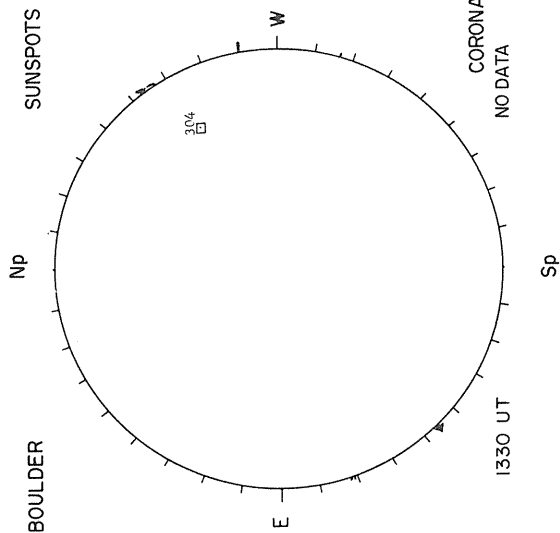
E W

Sp

O7
RAMEY AFB

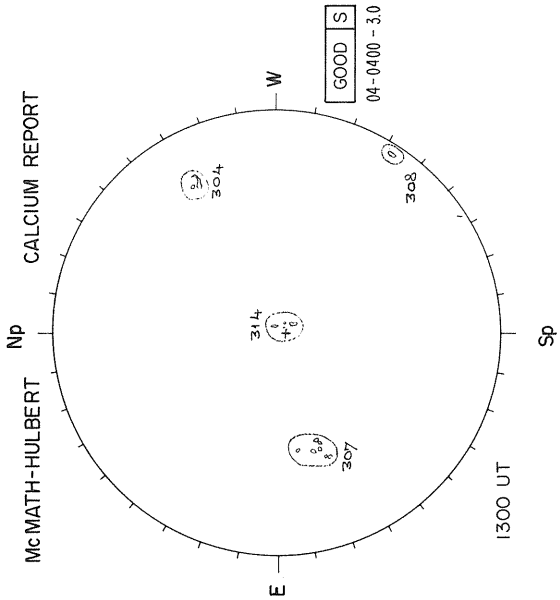


H α BOULDER

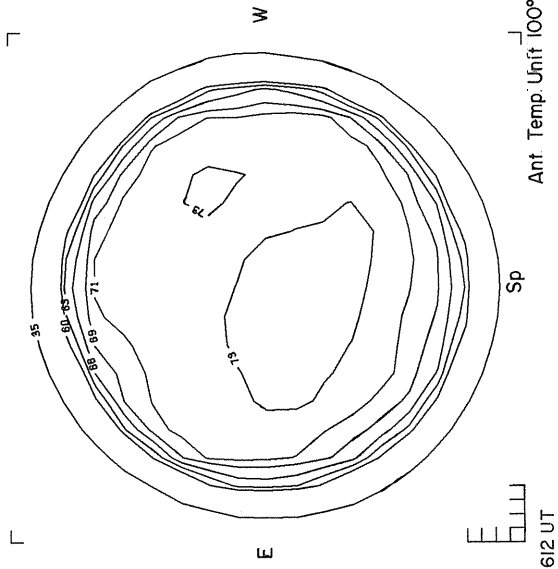


SUNSPOTS

McMATH-HULBERT
CALCIUM REPORT



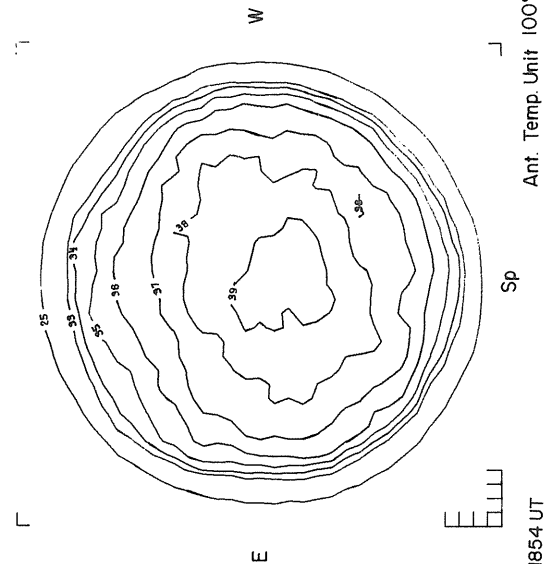
NELC LA POSTA



2.0 CM

Ant. Temp. Unit 100°K

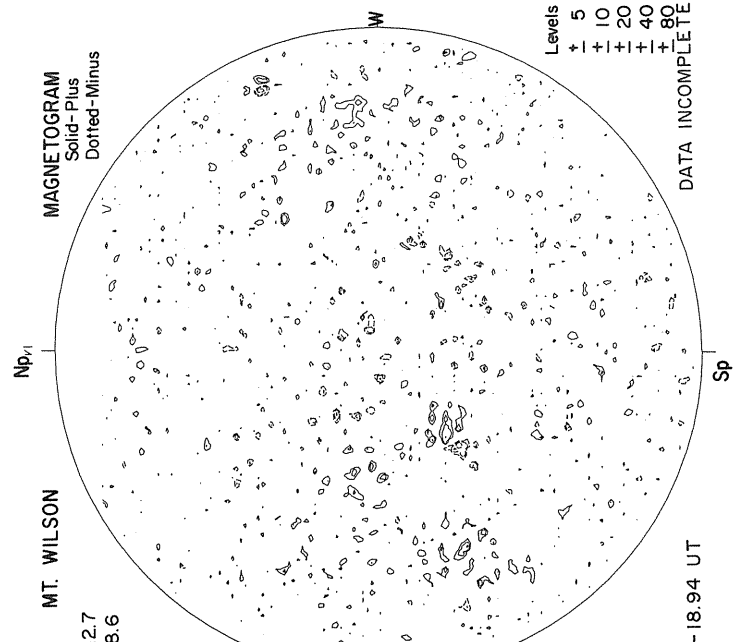
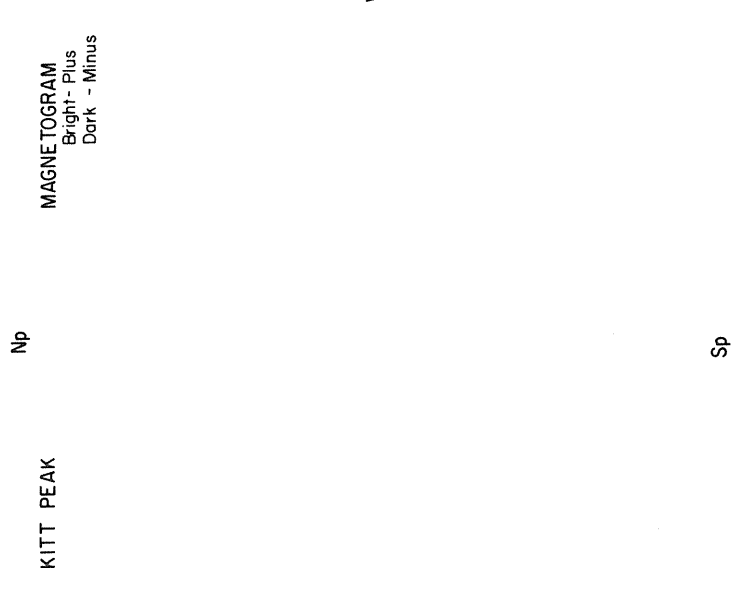
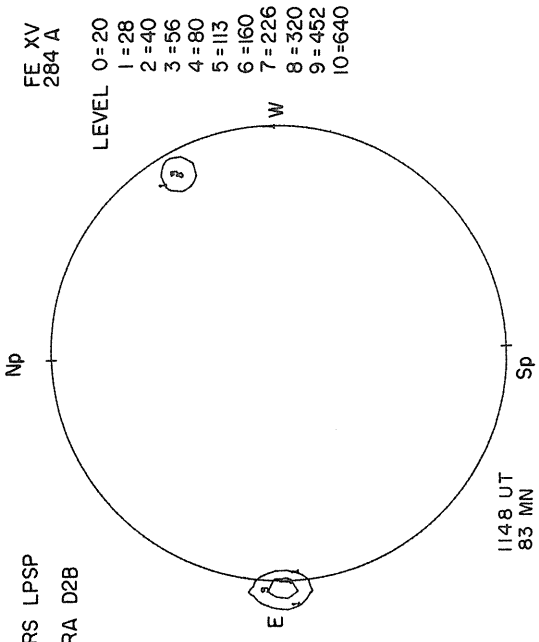
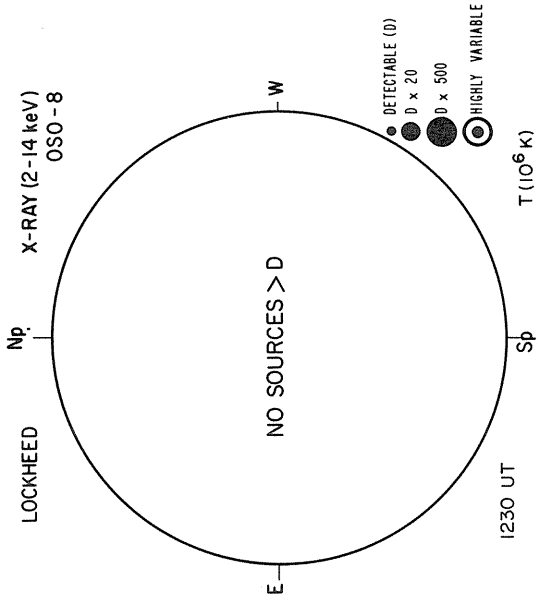
NELC LA POSTA

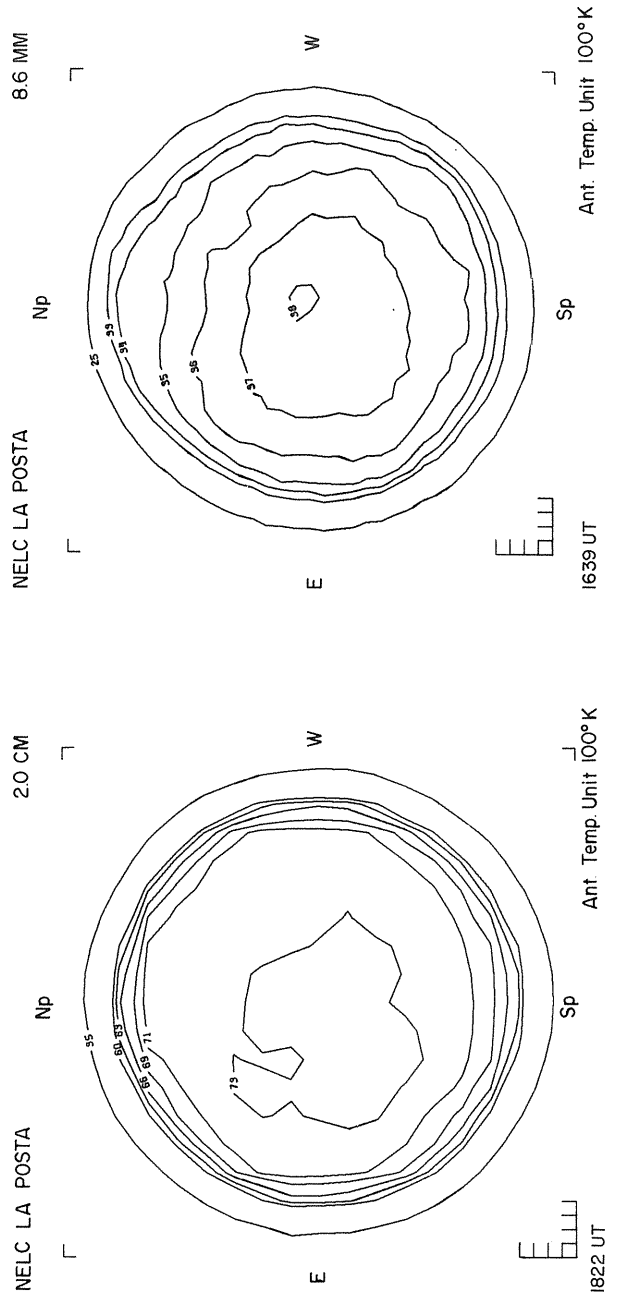
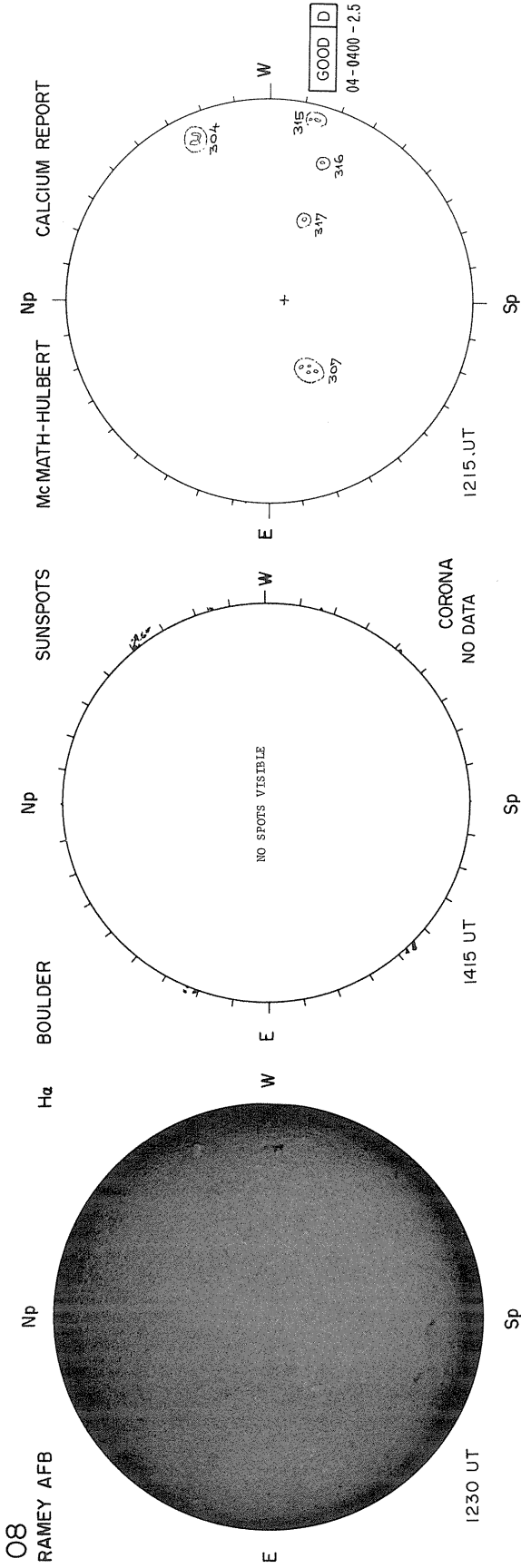


8.6 MM

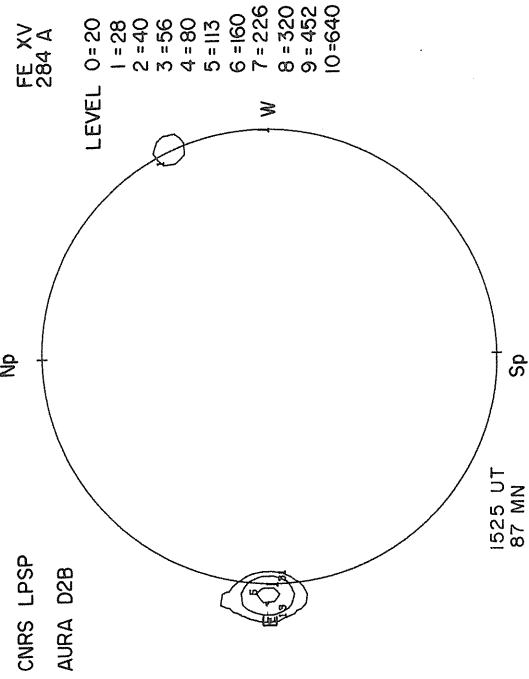
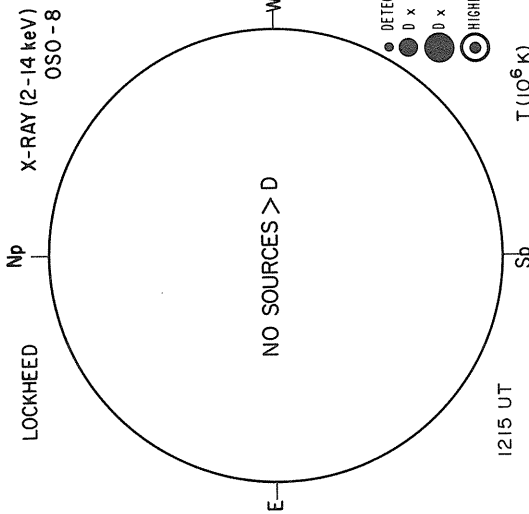
Ant. Temp. Unit 100°K

JULY 8, 1976 (P = 0.54, B₀ = 3.67, L₀ = 174.00)





JULY 9, 1976 (P = 1.00, B₀ = 3.78, L₀ = 160.77)



KITT PEAK

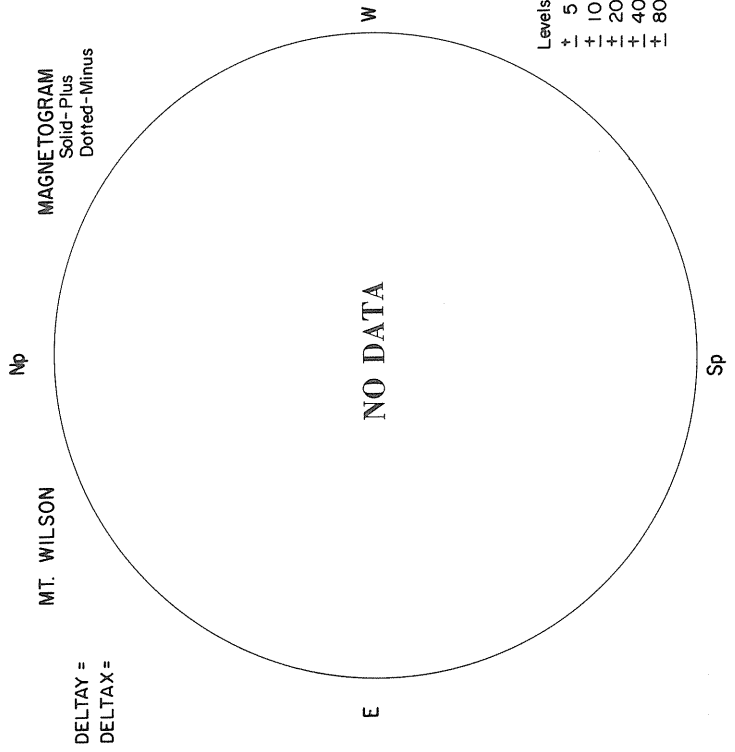
MAGNETOGRAM
Bright - Plus
Dark - Minus

Np

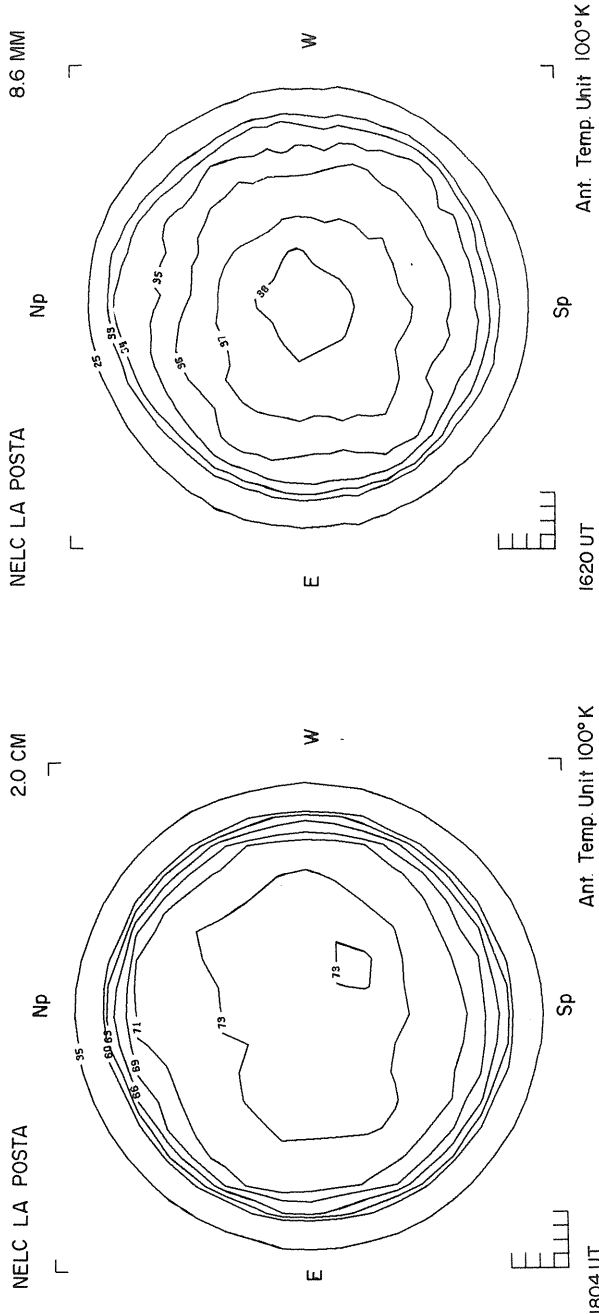
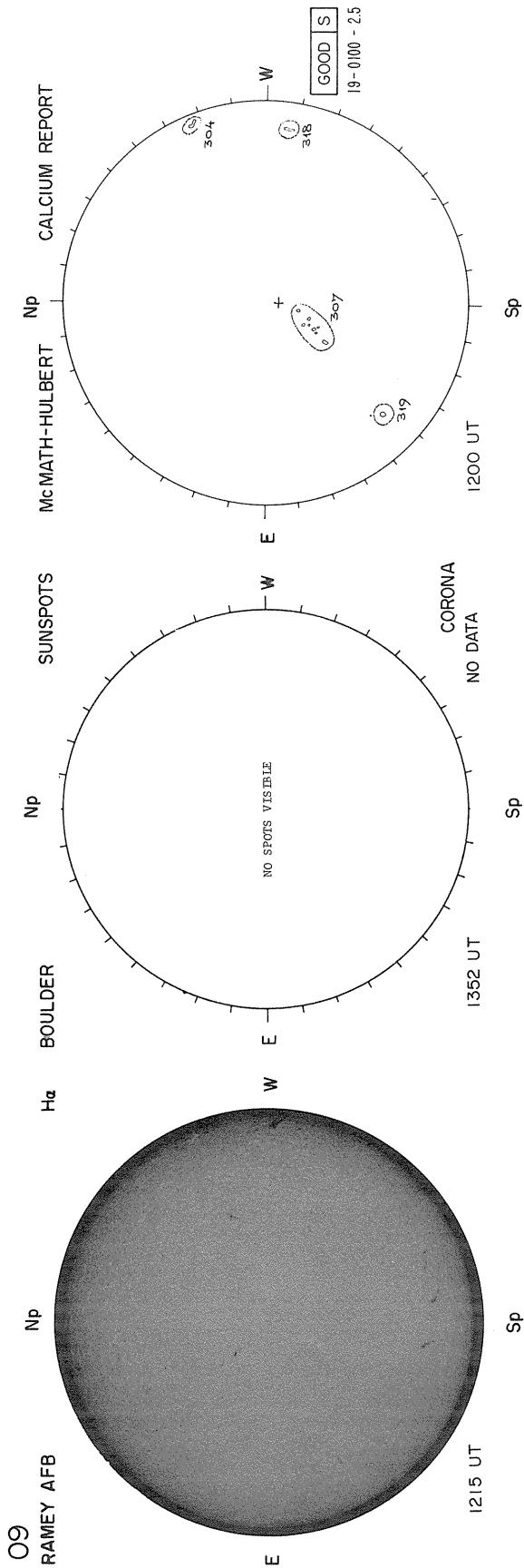
DELTA Y =
DELTA X =

E

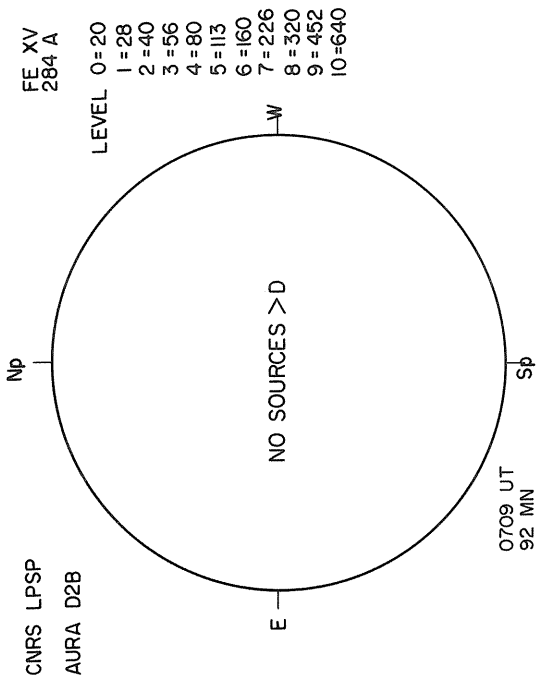
W



Sp

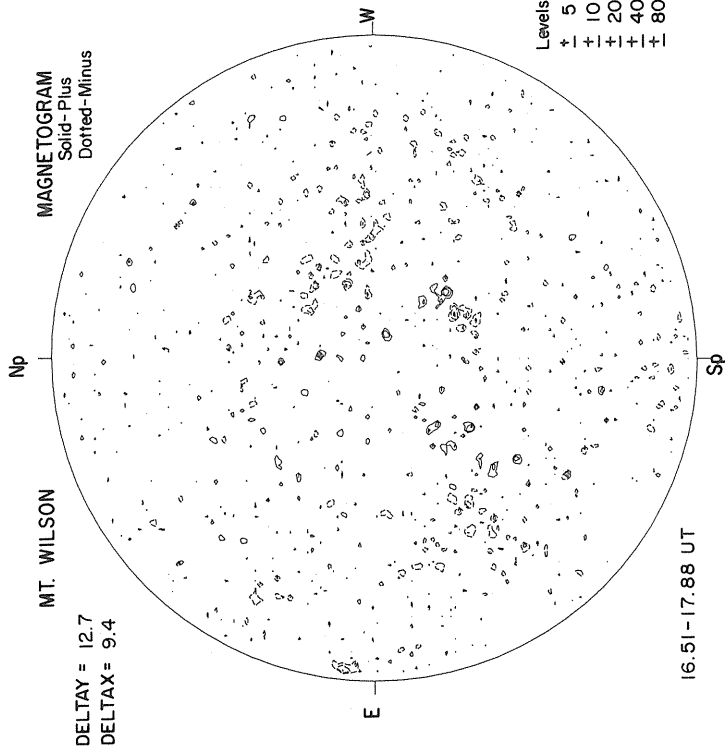
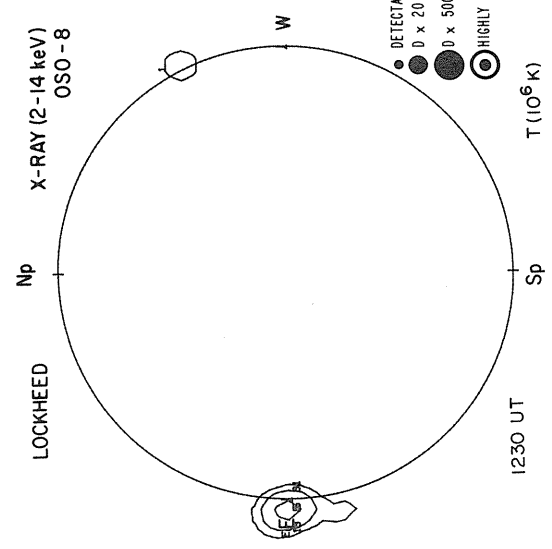


JULY 10, 1976 (P = 1.45, B₀ = 3.88, L₀ = 147.53)

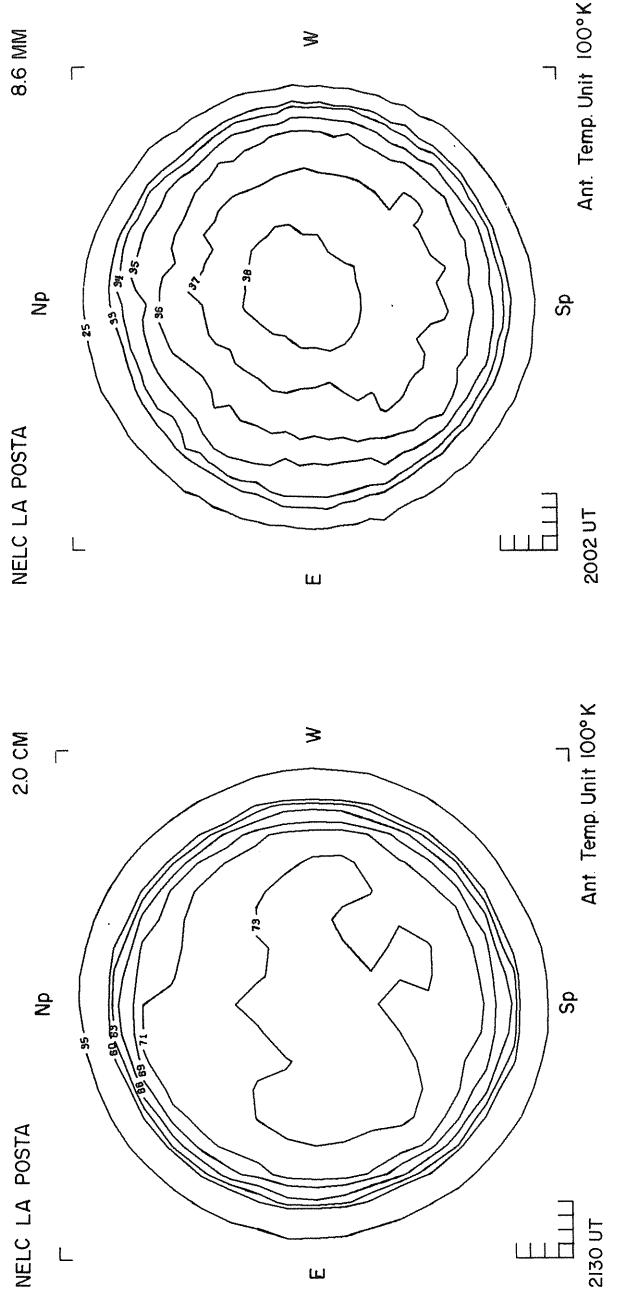
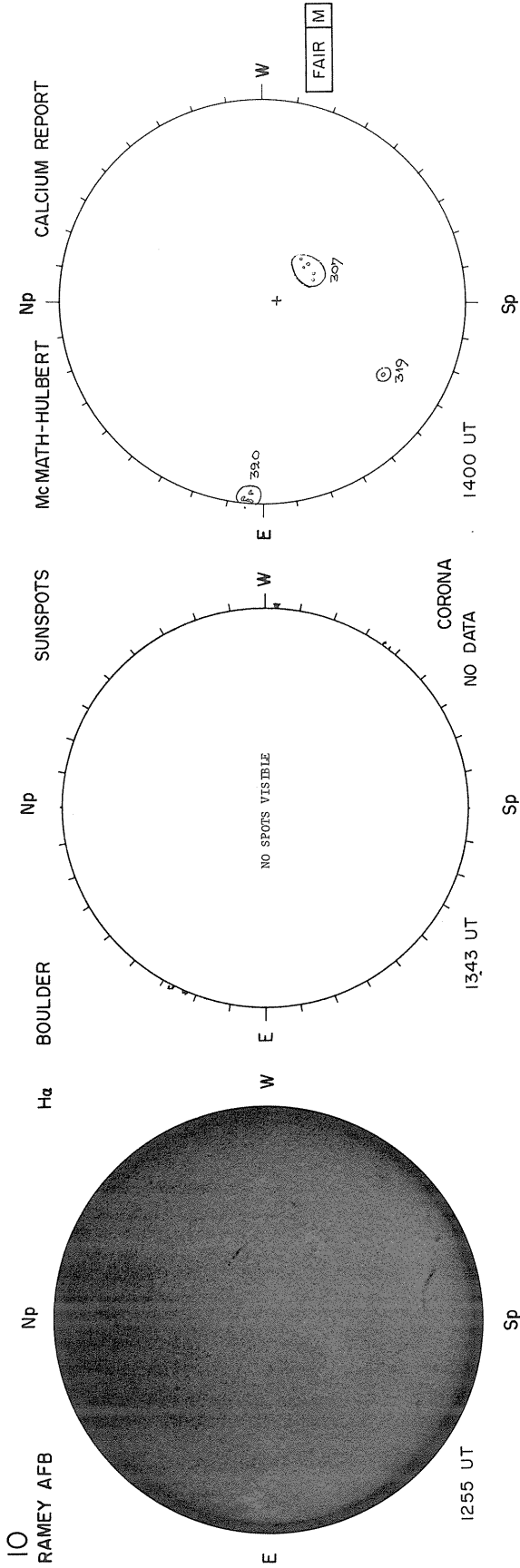


DETECTABLE (D)
● 0 x 20
● 0 x 500
○ HIGHLY VARIABLE

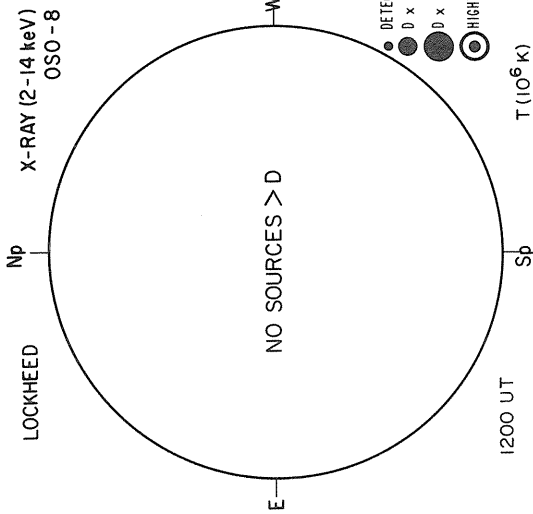
T (10⁶ K)



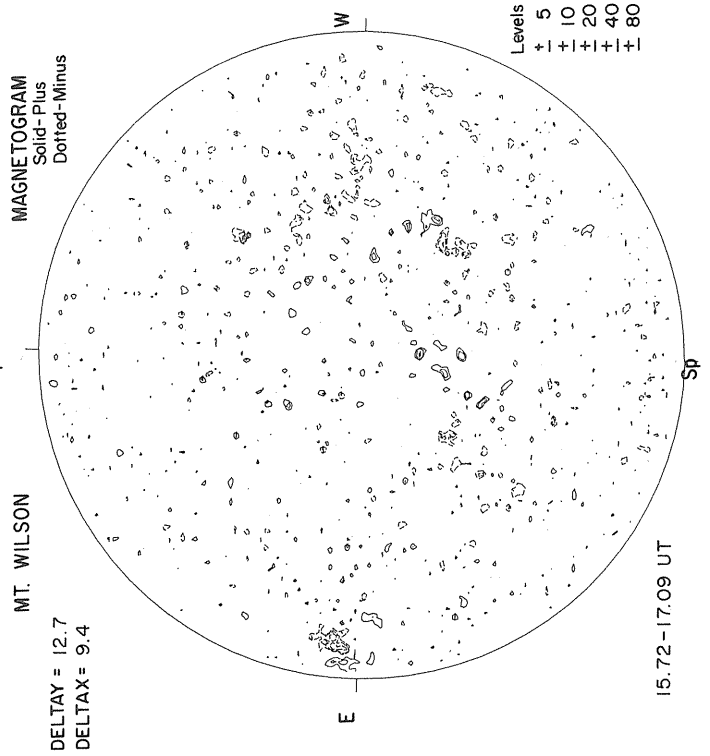
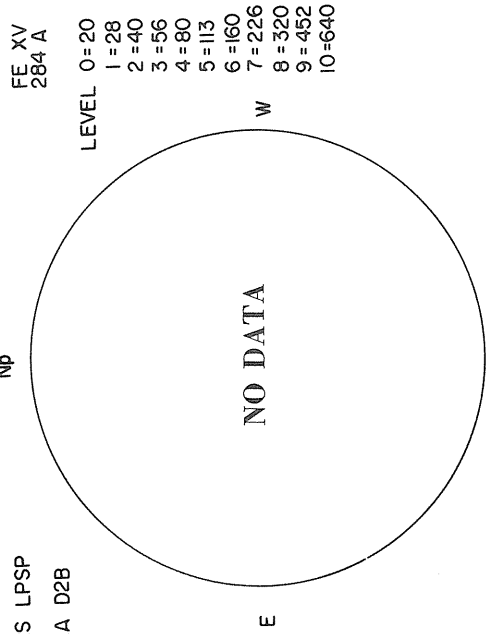
Sp



JULY 11, 1976 (P = 1.90, B₀ = 3.98, L₀ = 134.30)



KITT PEAK
 MAGNETOGRAM
 Bright - Plus
 Dark - Minus



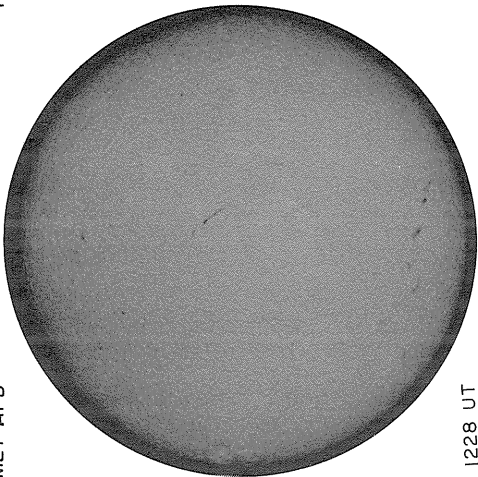
Sp

W

E

|| RAMEY AFB

Np



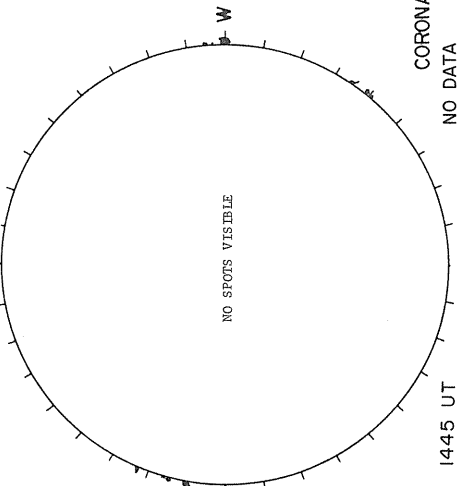
E

1228 UT

Sp

H α BOULDER

Np



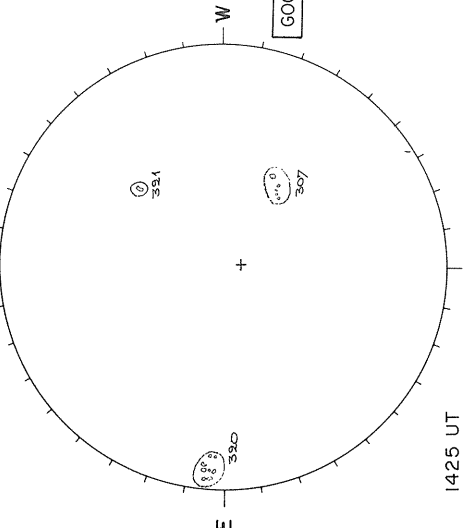
E

1445 UT

Sp

SUNSPOTS

Np



E

1425 UT

Sp

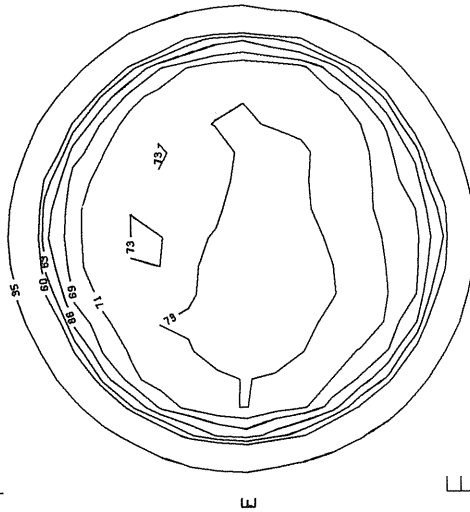
Mc MATH-HULBERT

CALCIUM REPORT

GOOD S

NELC LA POSTA

┌



E

1827 UT

Sp

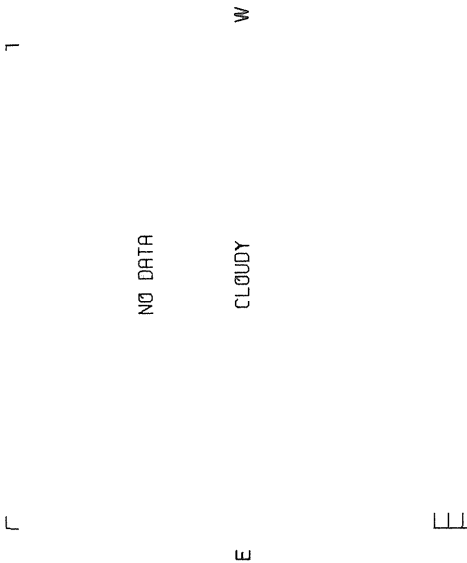
Ant. Temp. Unit 100°K

2.0 CM

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NELC LA POSTA

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E

1654 UT

Sp

Ant. Temp. Unit 100°K

8.6 MM

┌

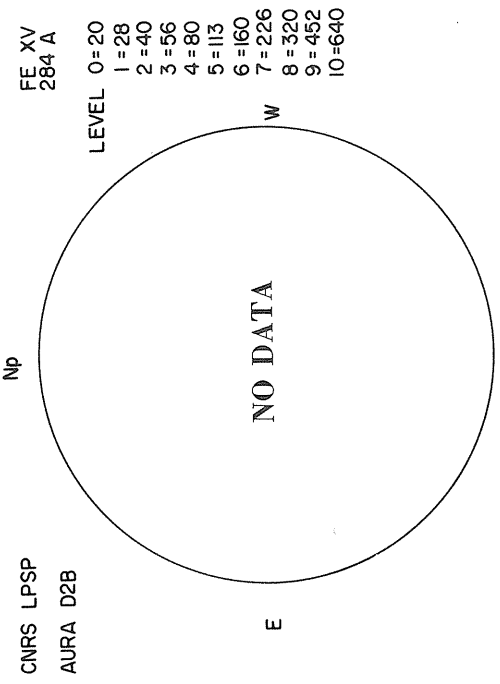
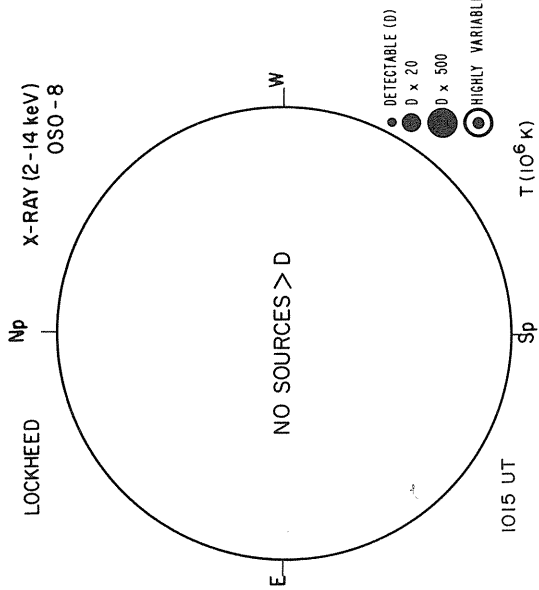
Np

NO DATA

CLOUDY

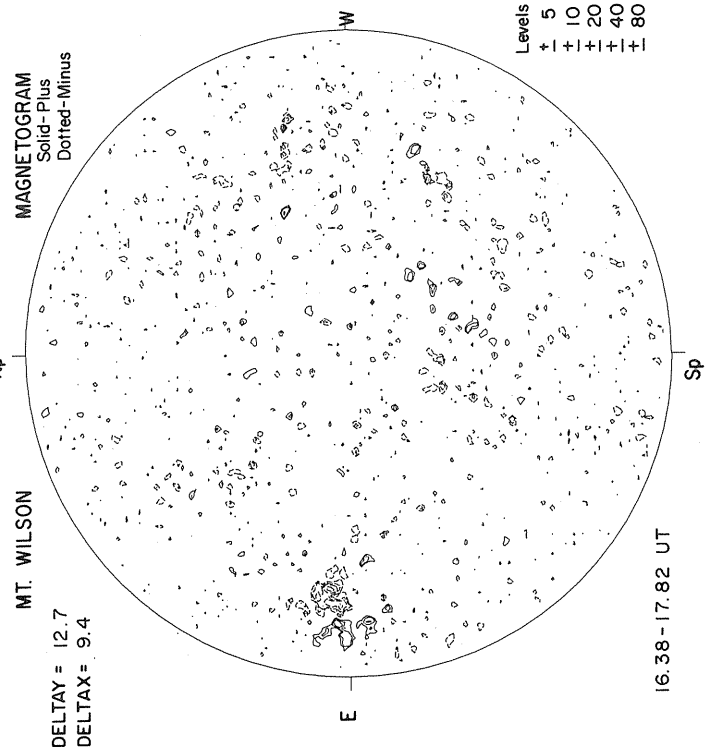
W

JULY 12, 1976 (P = 2.35, B₀ = 4.08, L₀ = |21.06)



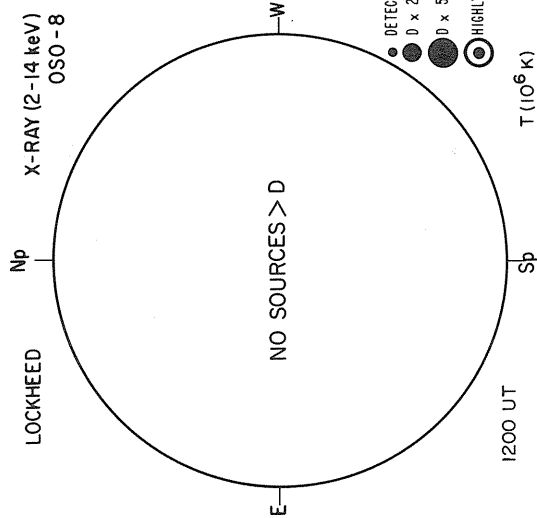
KITT PEAK

MAGNETOGRAM
Bright - Plus
Dark - Minus

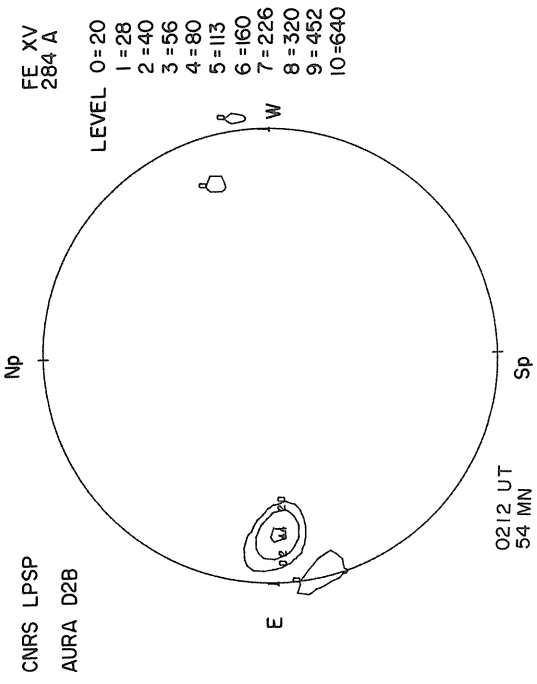


Sp

JULY 13, 1976 (P = 2.79, B₀ = 4.18, L₀ = 107.83)



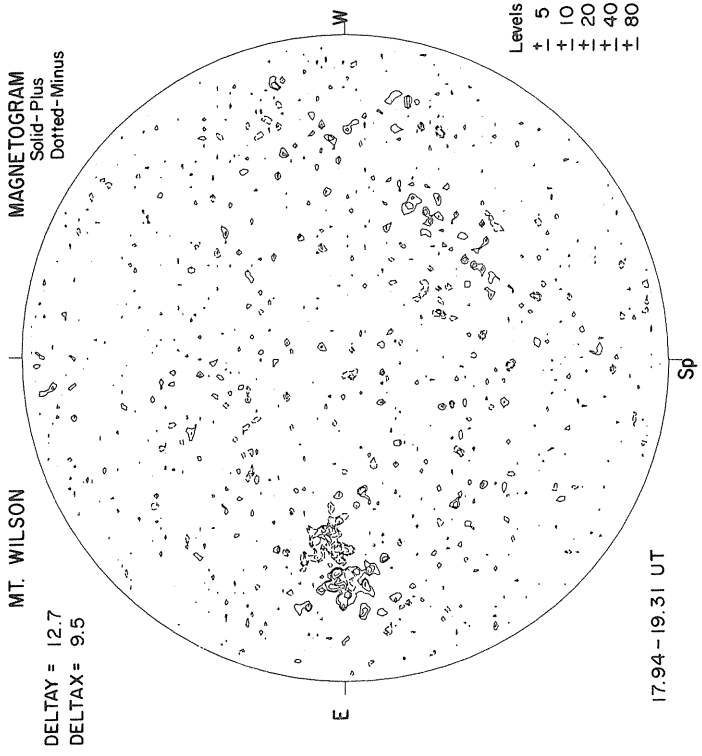
- DETECTABLE (D)
- 0 x 20
- 0 x 500
- ⊙ HIGHLY VARIABLE

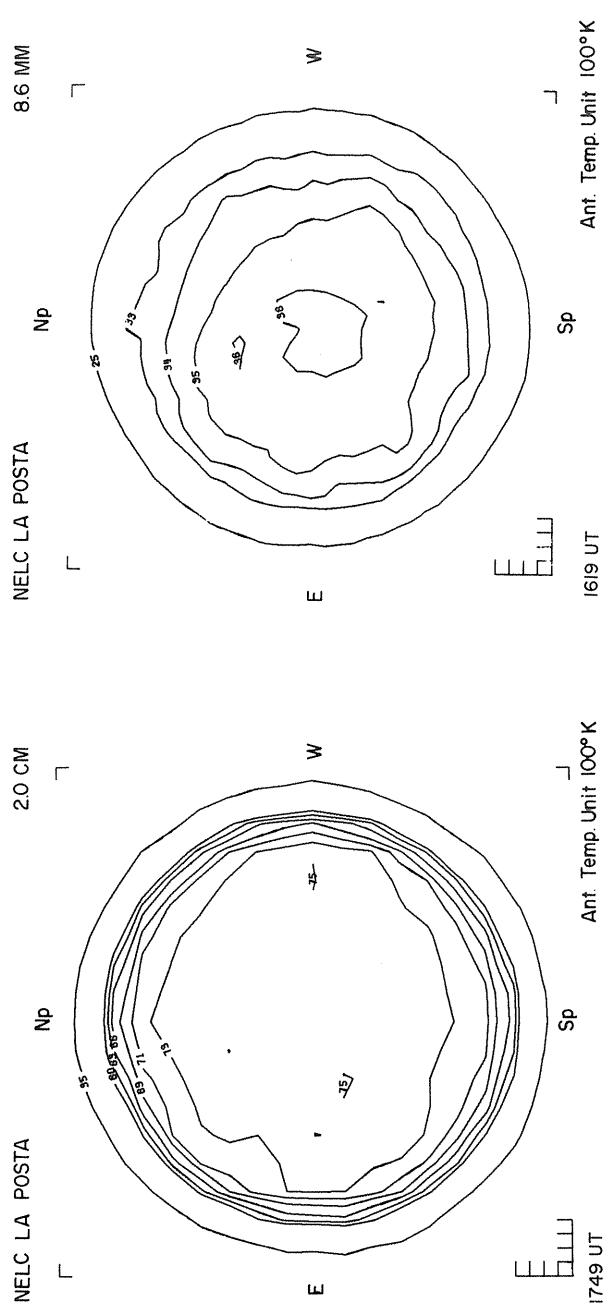
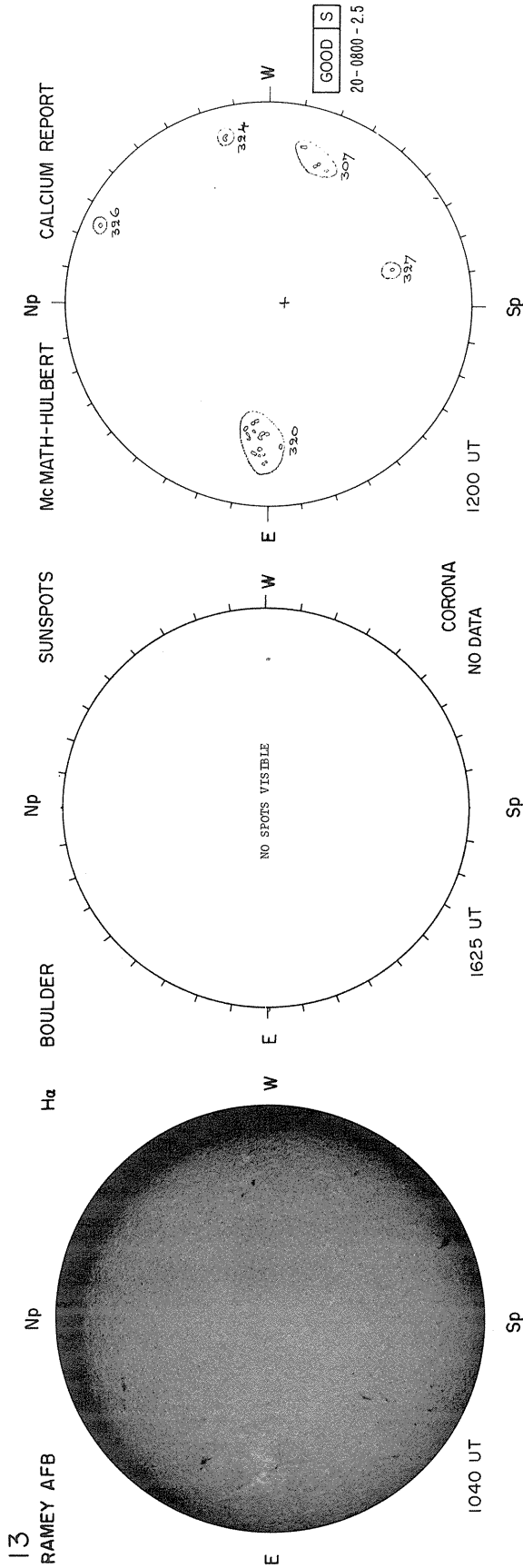


MAGNETOGRAM
Bright - Plus
Dark - Minus

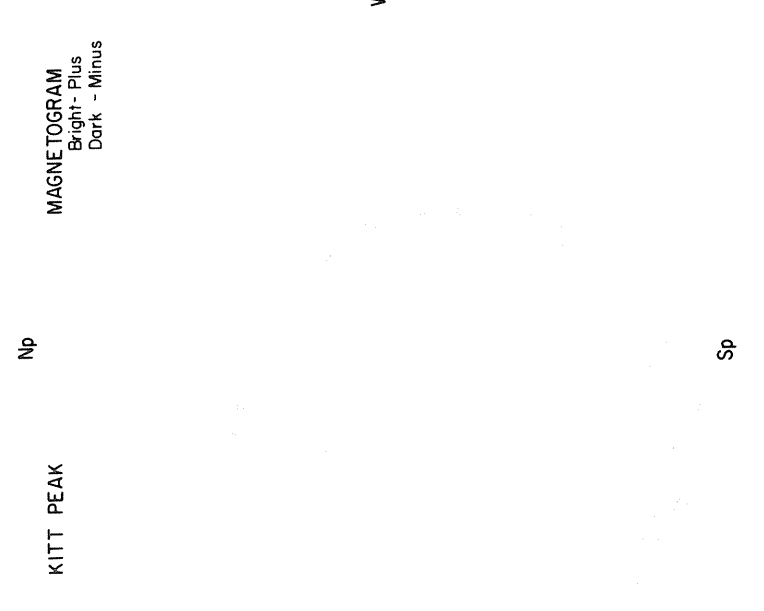
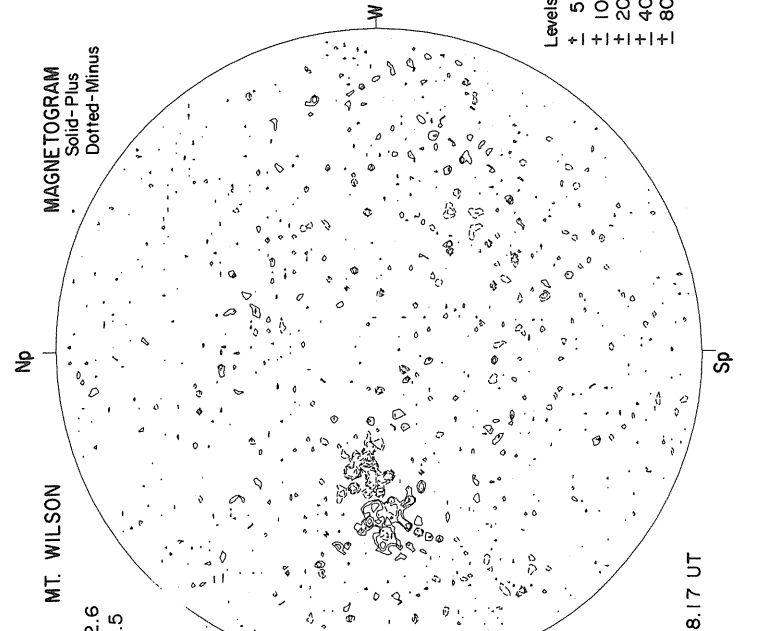
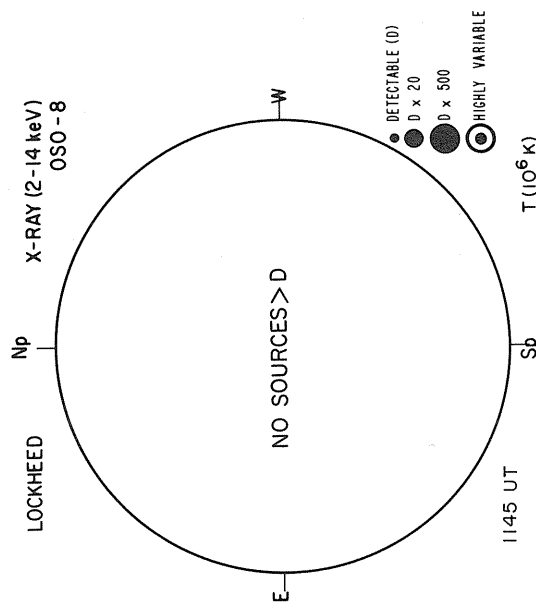
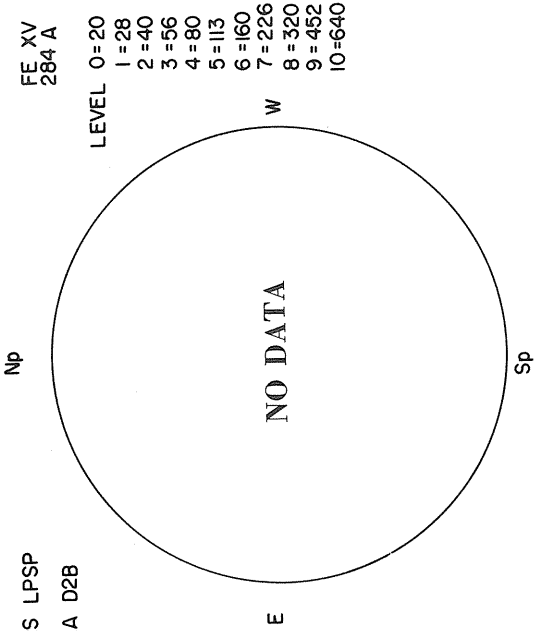
MAGNETOGRAM
Solid - Plus
Dotted - Minus

MT. WILSON
DELTA Y = 12.7
DELTA X = 9.5





JULY 14, 1976 (P = 3.24, B₀ = 4.28, L₀ = 94.60)



DETECTABLE (D)
● 0 x 20
● 0 x 500
⊙ HIGHLY VARIABLE

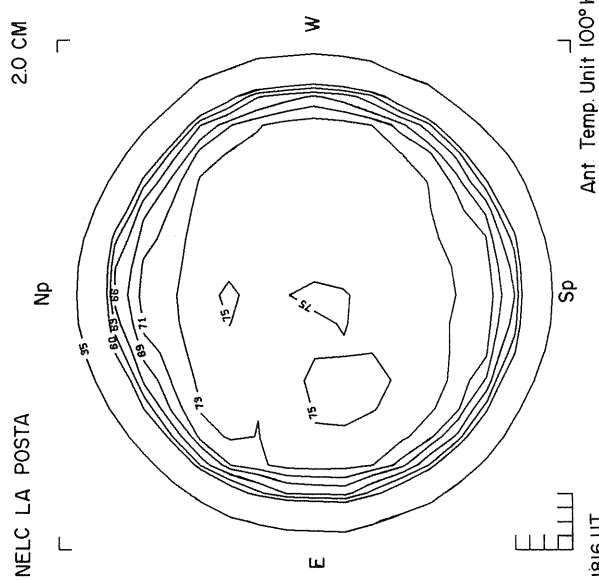
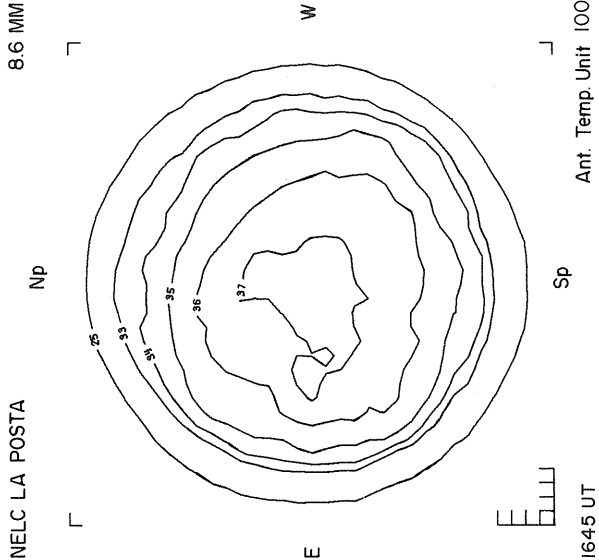
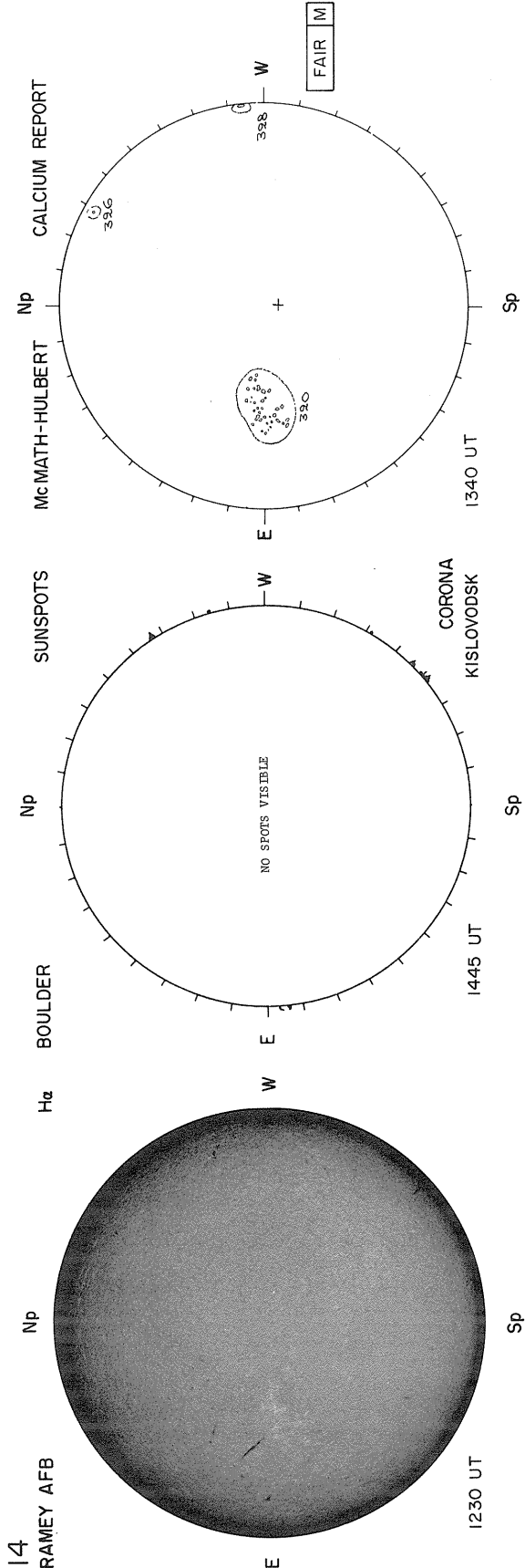
T (10⁶ K)

LEVELS
+ 5
+ 10
+ 20
+ 40
+ 80

DETECTABLE (D)
● 0 x 20
● 0 x 500
⊙ HIGHLY VARIABLE

T (10⁶ K)

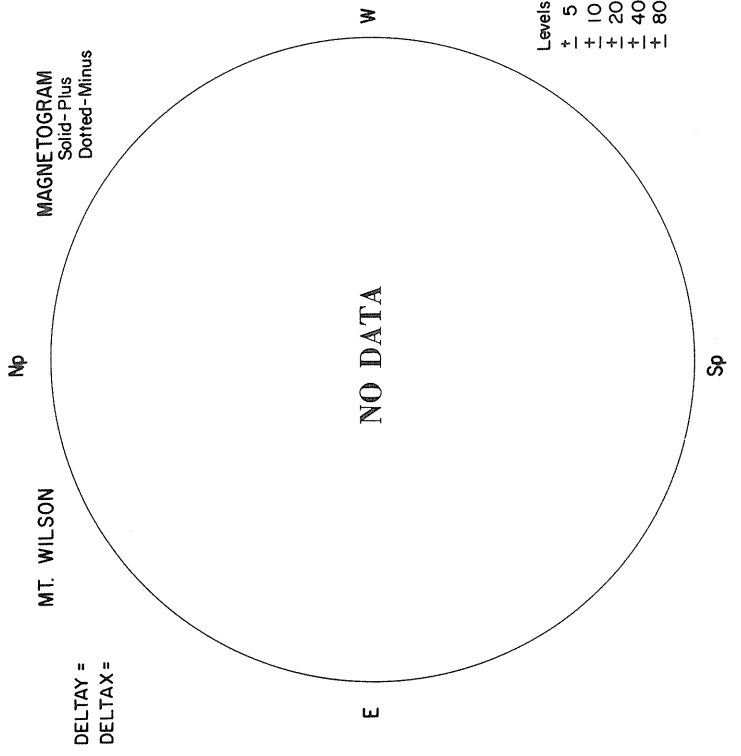
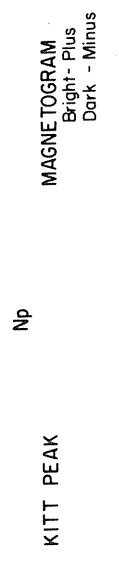
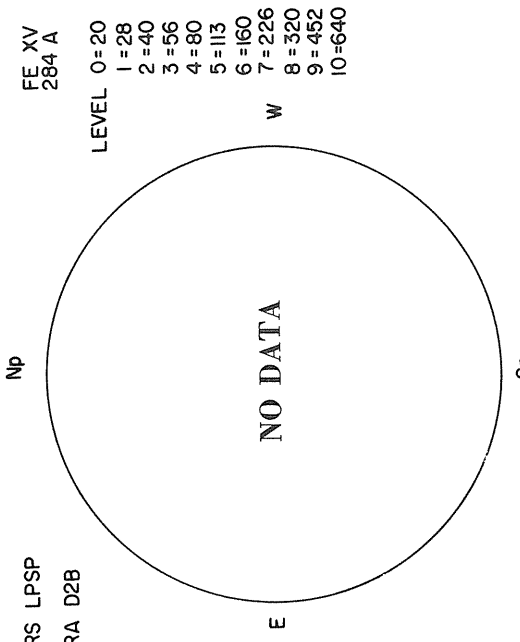
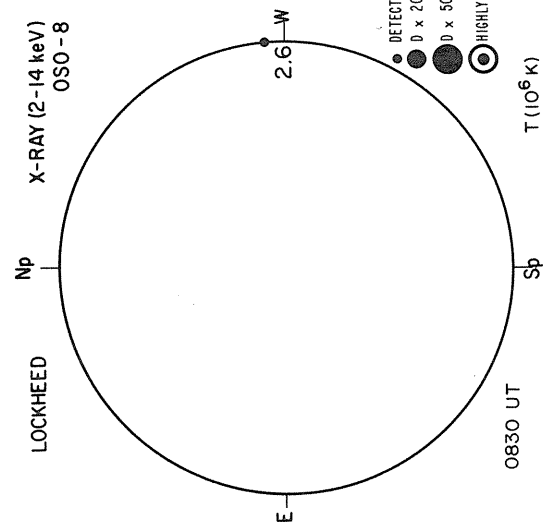
LEVELS
+ 5
+ 10
+ 20
+ 40
+ 80

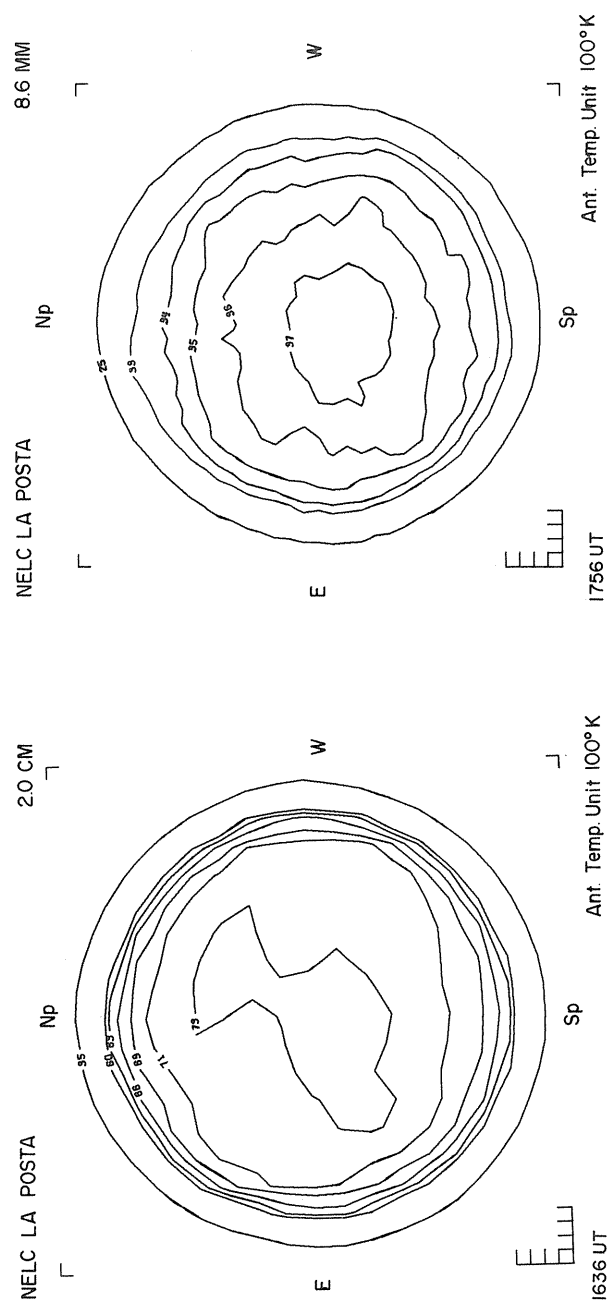
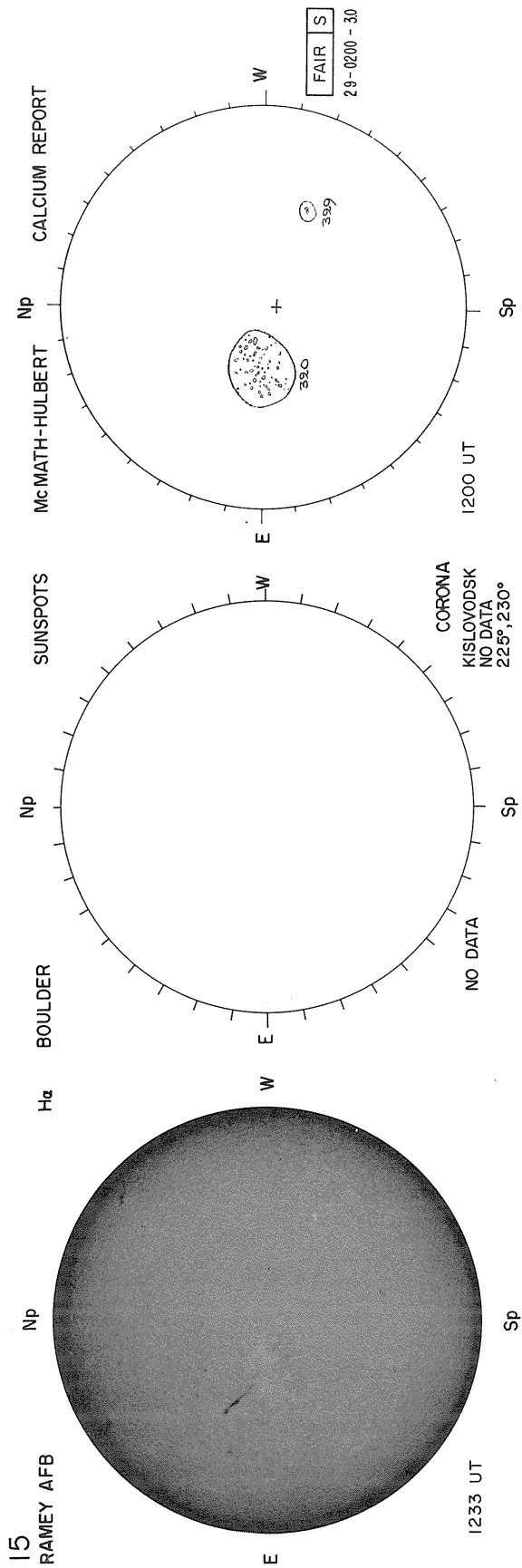


1816 UT

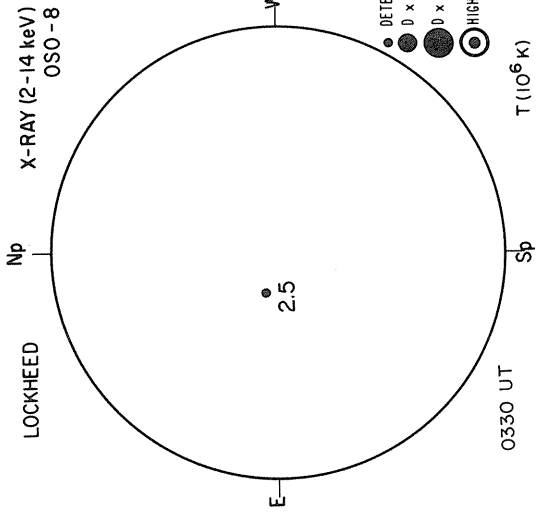
1645 UT

JULY 15, 1976 (P = 3.69, B₀ = 4.38, L₀ = 81.36)

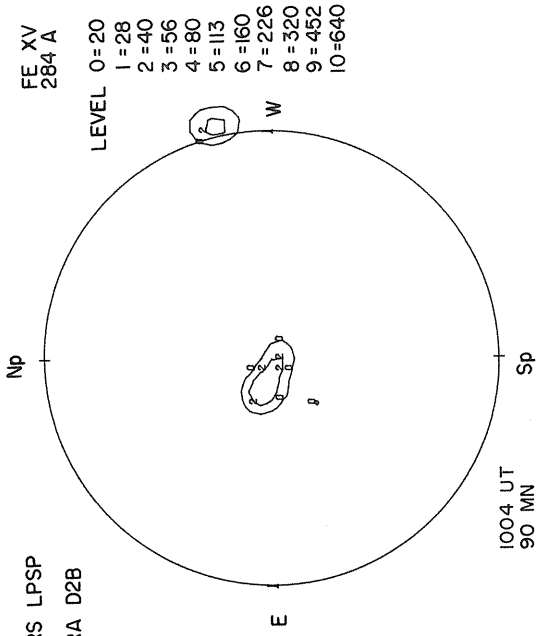




JULY 16, 1976 (P = 4.13, B₀ = 4.47, L₀ = 68.13)



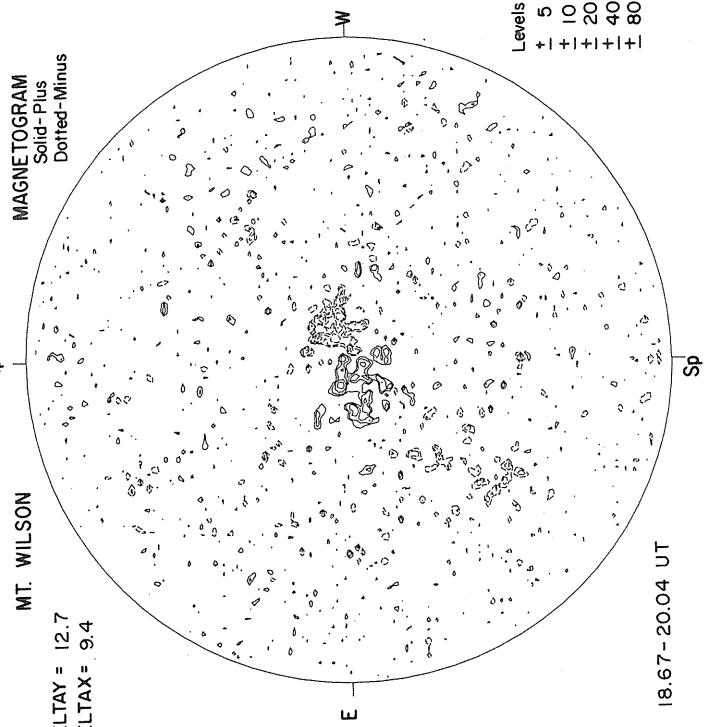
CNRS LPSP
AURA D2B



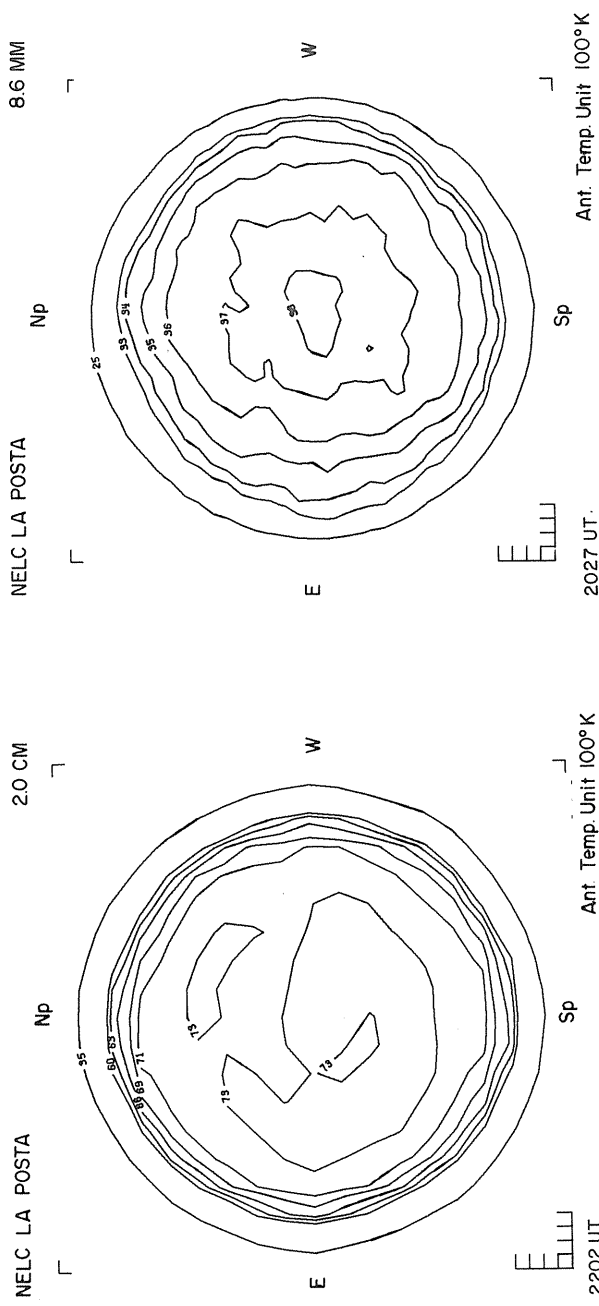
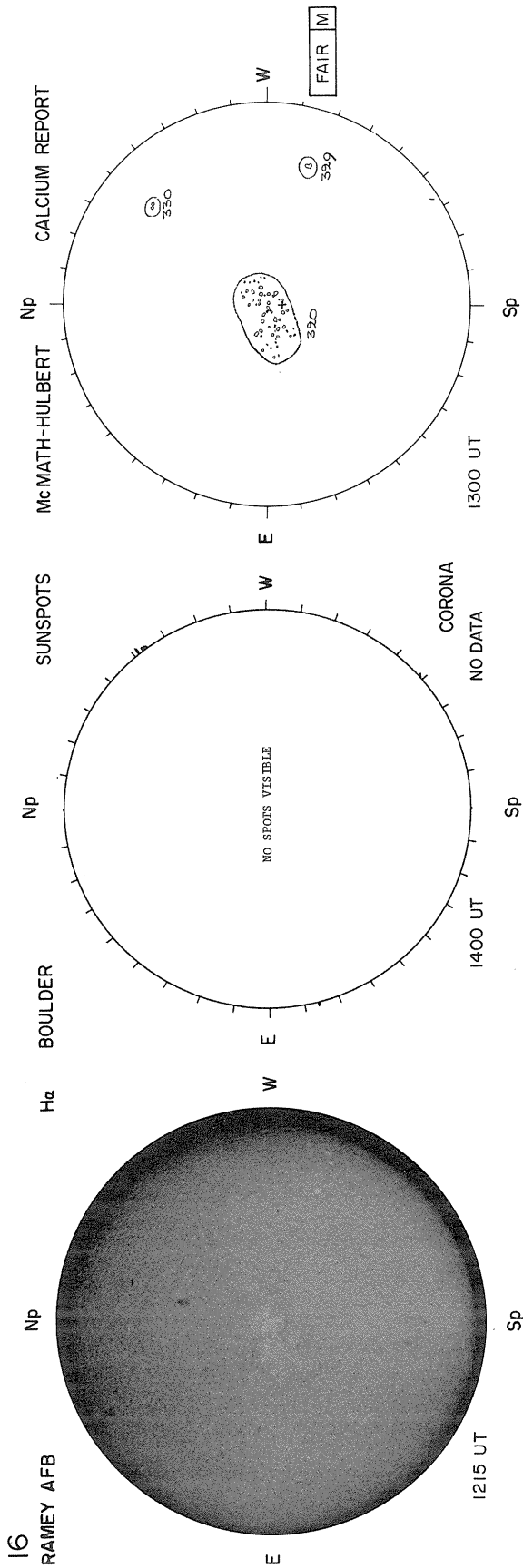
MAGNETOGRAM
Bright - Plus
Dark - Minus

KITT PEAK

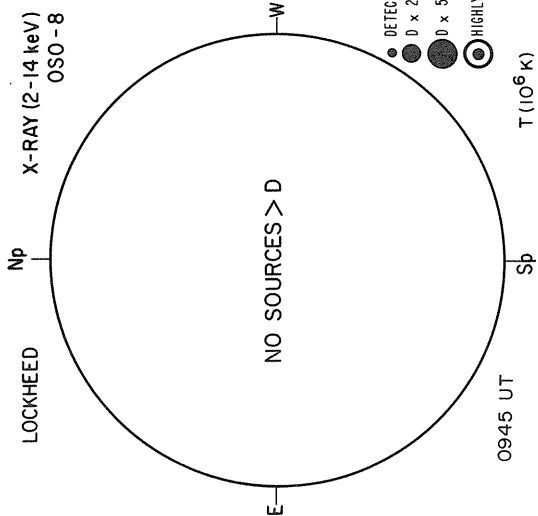
MT. WILSON
DELTA = 12.7
DELTA X = 9.4



Sp

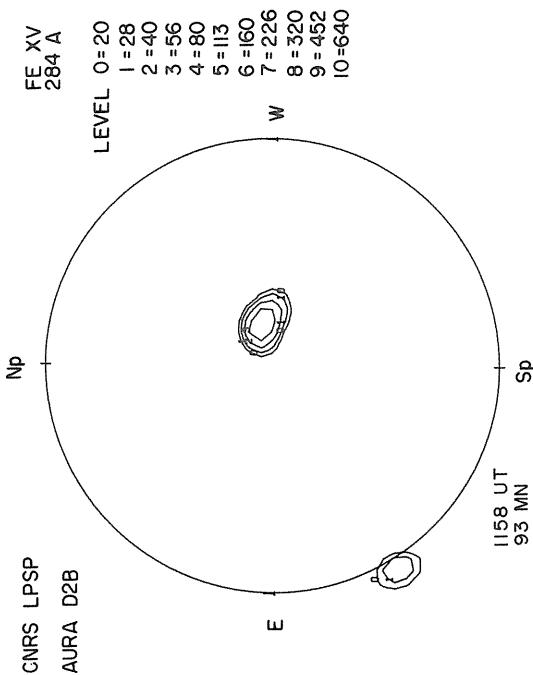


JULY 17, 1976 (P = 4.57, B₀ = 4.57, L₀ = 54.90)



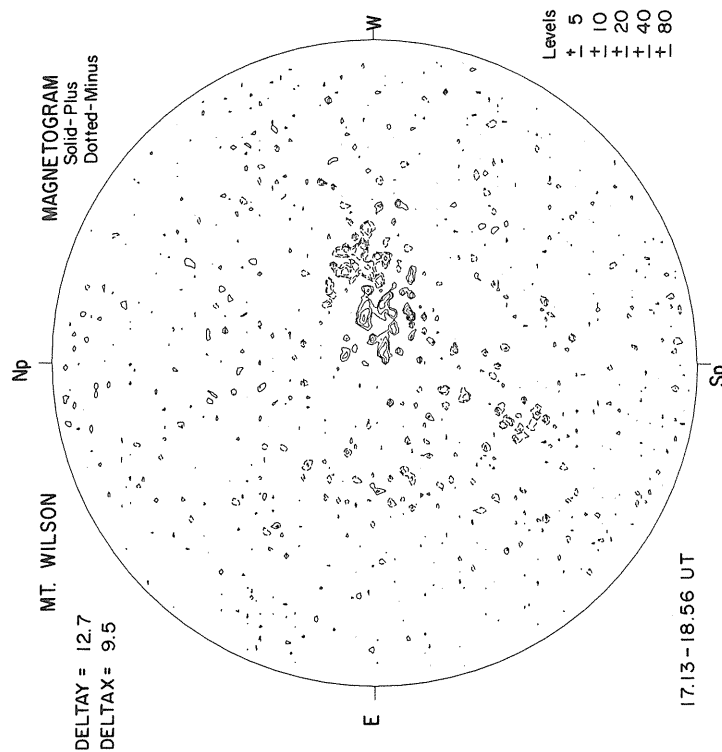
- DETECTABLE (D)
- 0 x 20
- 0 x 500
- HIGHLY VARIABLE

KITT PEAK
MAGNETOGRAM
Bright - Plus
Dark - Minus



- FE XV 284 A
- LEVEL 0=20
1=28
2=40
3=56
4=80
5=113
6=160
7=226
8=320
9=452
10=640

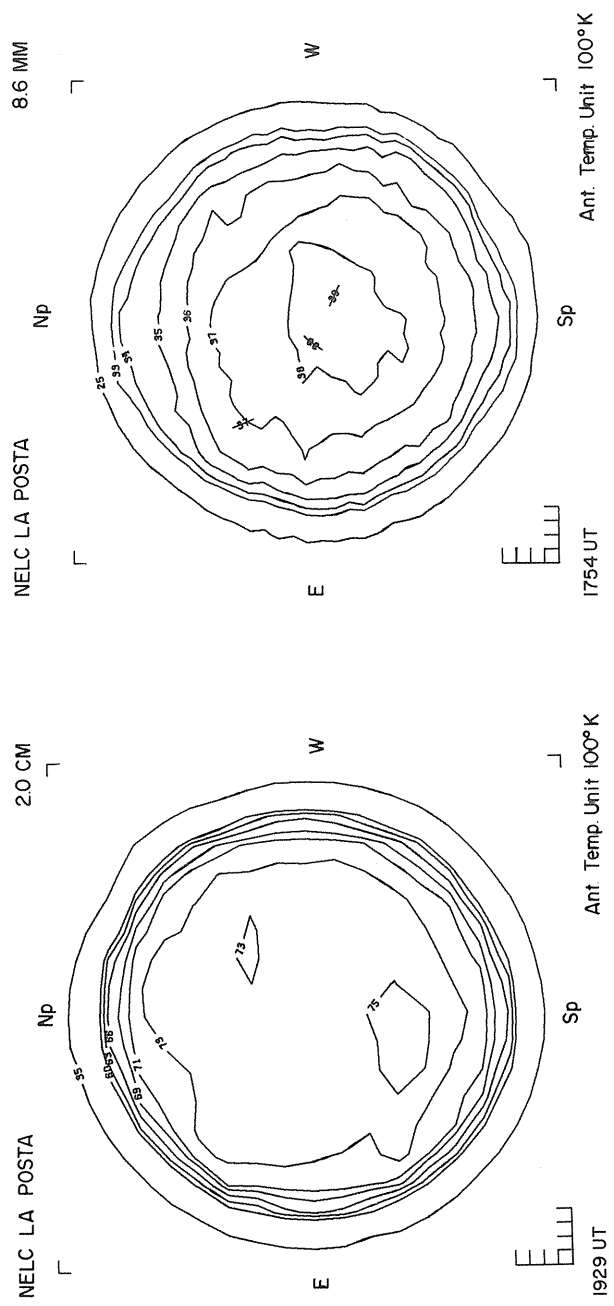
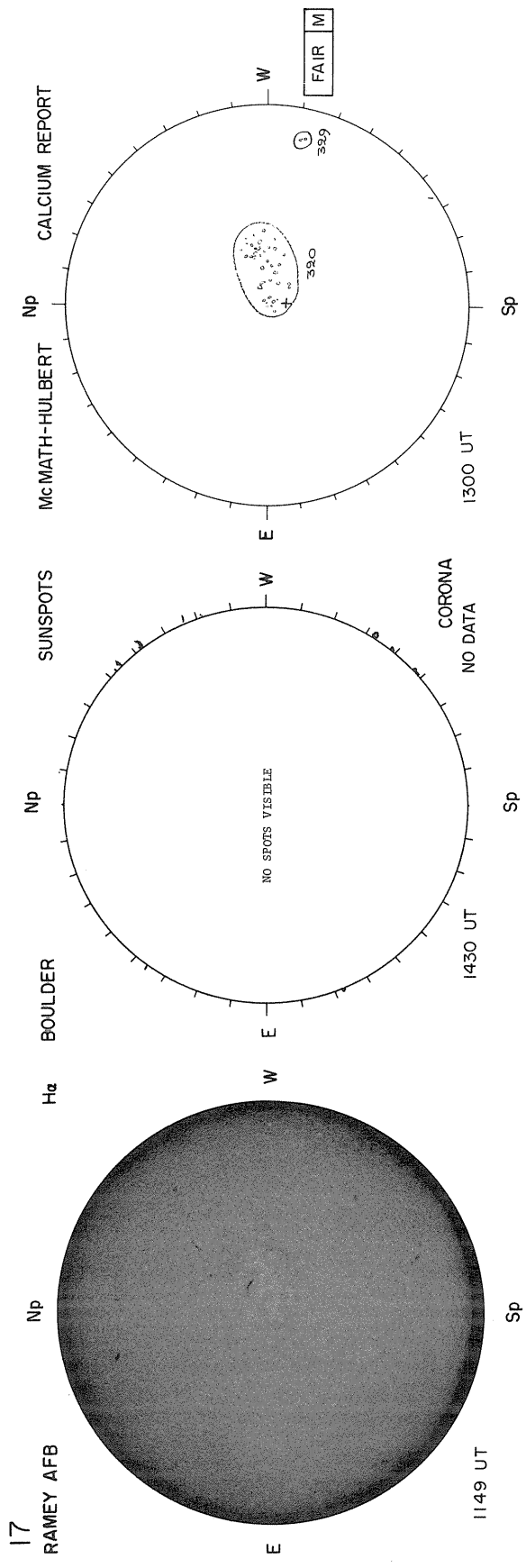
MT. WILSON
DELTA Y = 12.7
DELTA X = 9.5
MAGNETOGRAM
Solid - Plus
Dotted - Minus



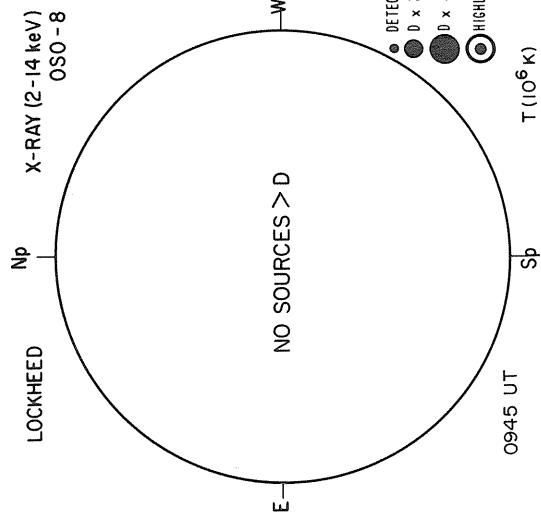
- Levels
+ 5
+ 10
+ 20
+ 40
+ 80

E W

Sp

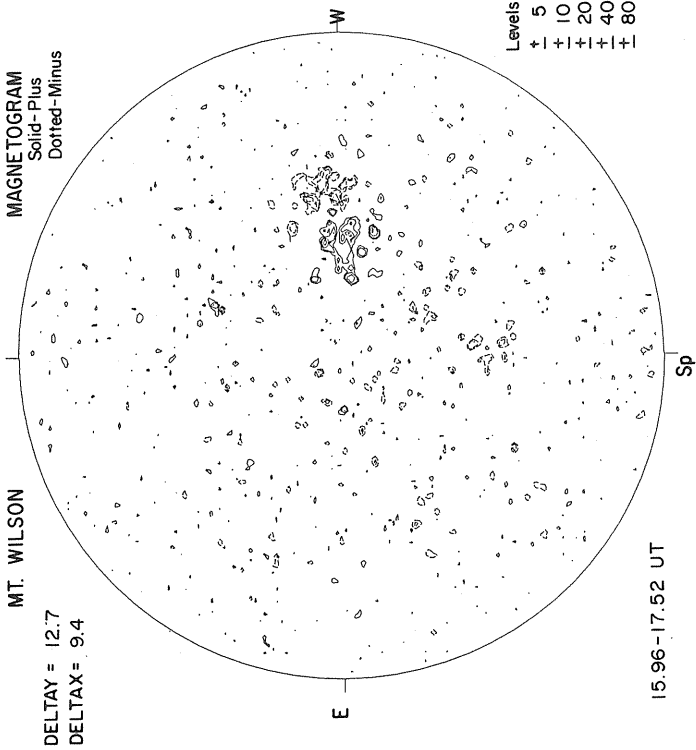
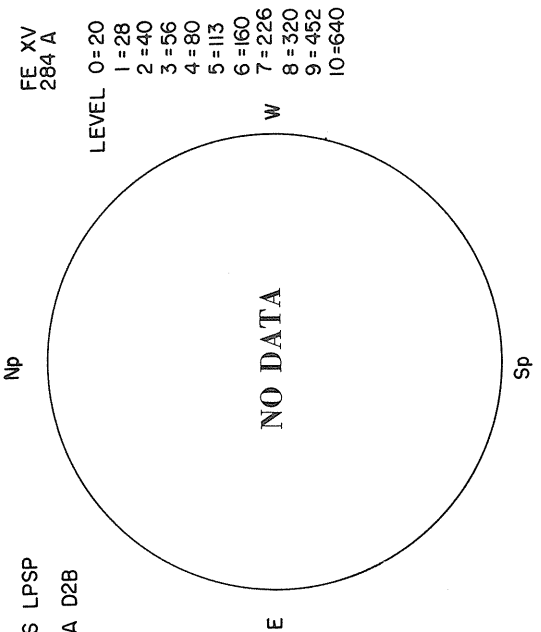


JULY 18, 1976 (P = 5.01, B₀ = 4.66, L₀ = 41.67)



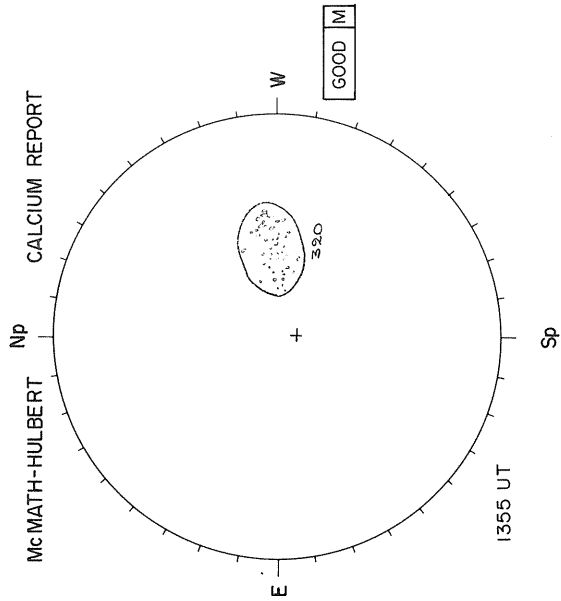
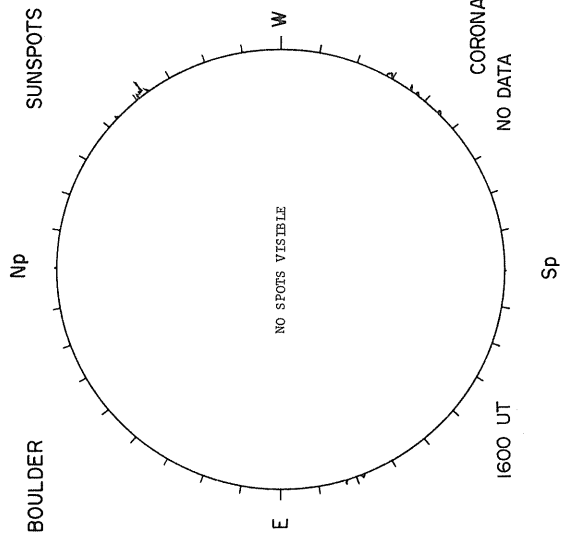
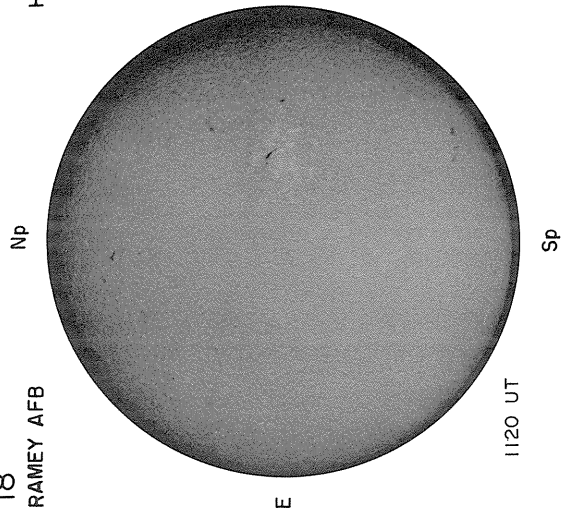
KITT PEAK

MAGNETOGRAM
Bright-Plus
Dark-Minus



Sp

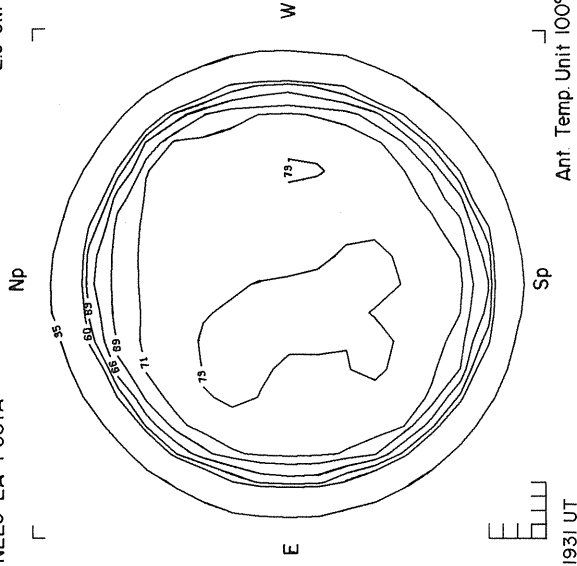
18
RAMEY AFB



CALCIUM REPORT

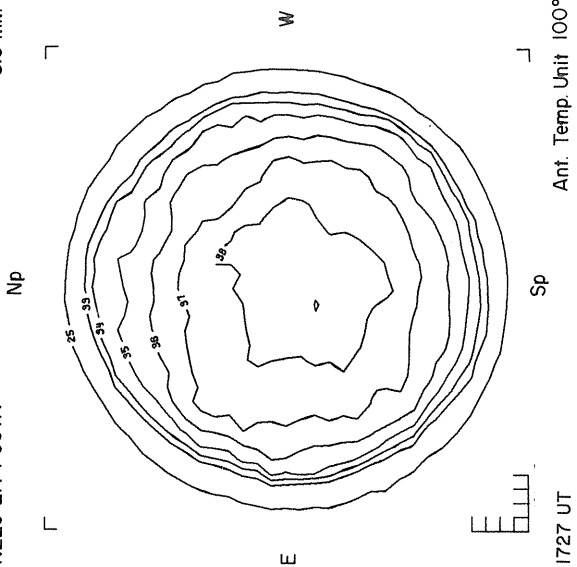
NELC LA POSTA

2.0 CM

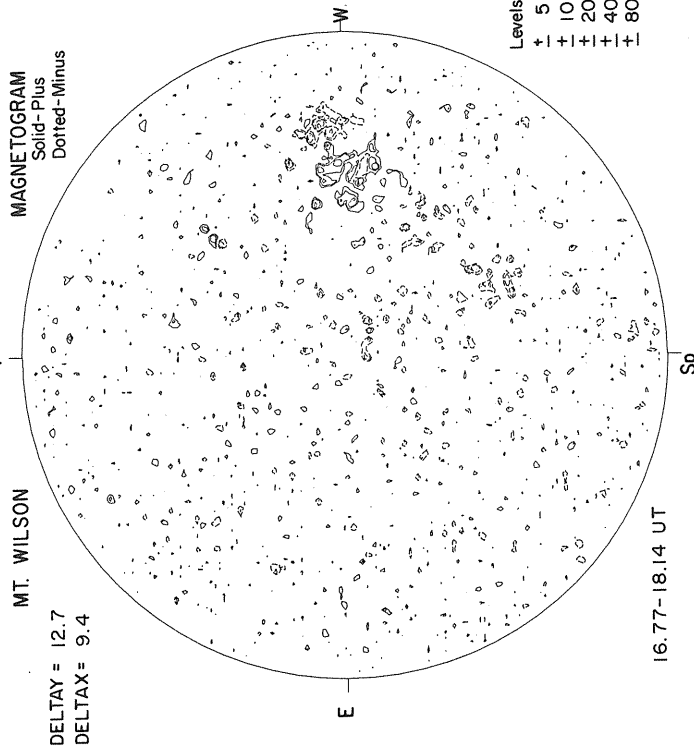
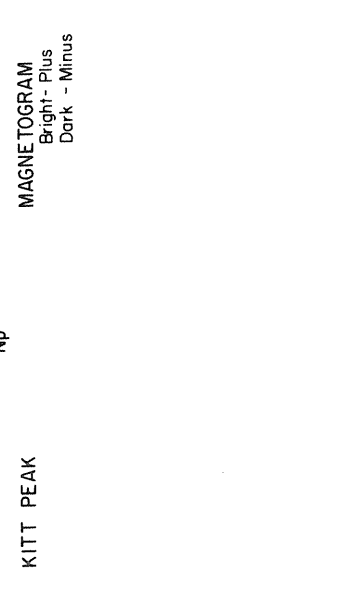
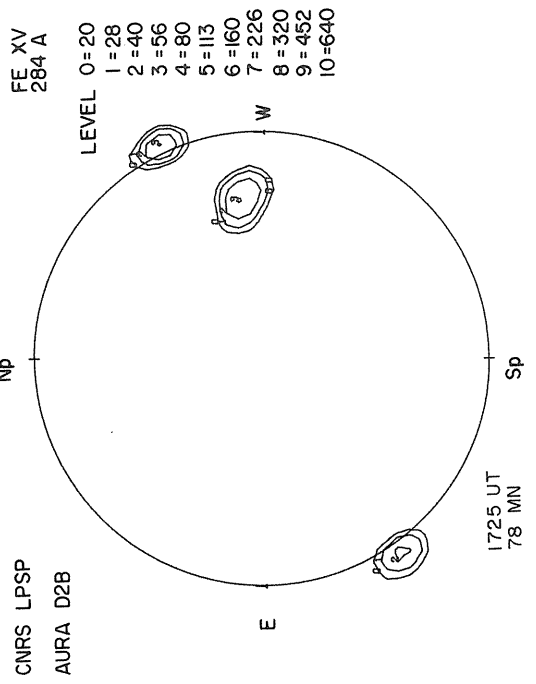
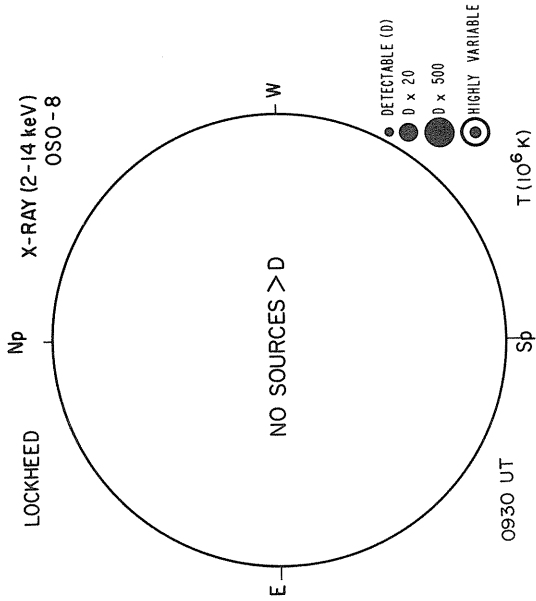


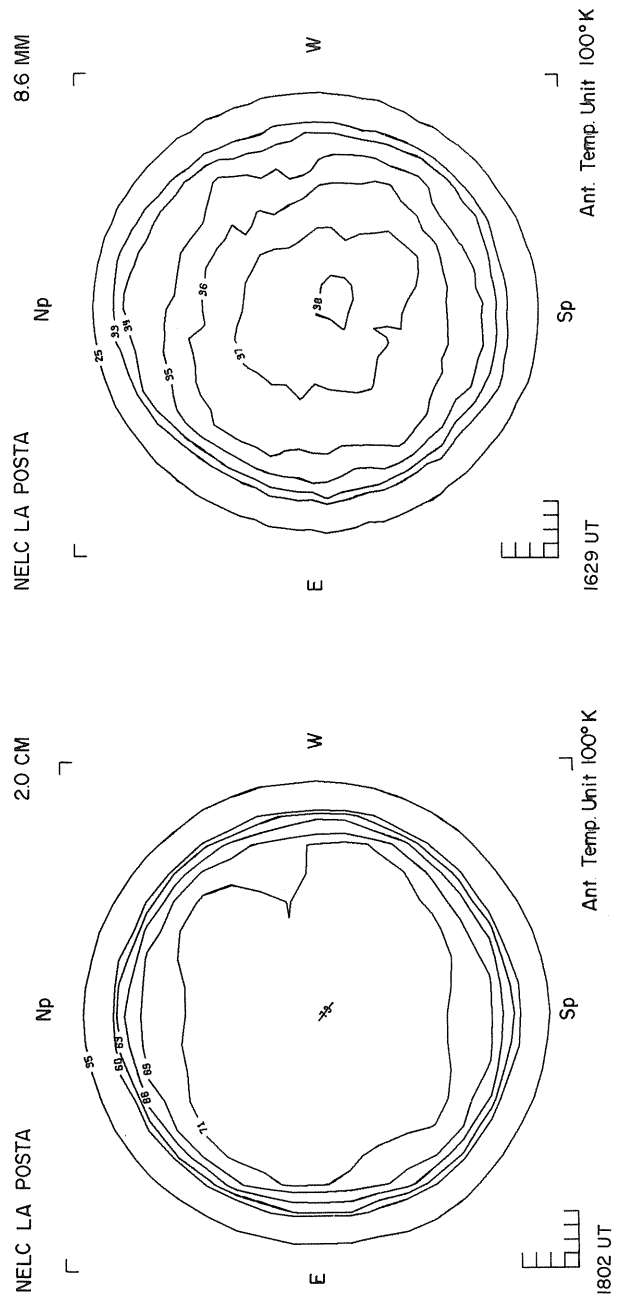
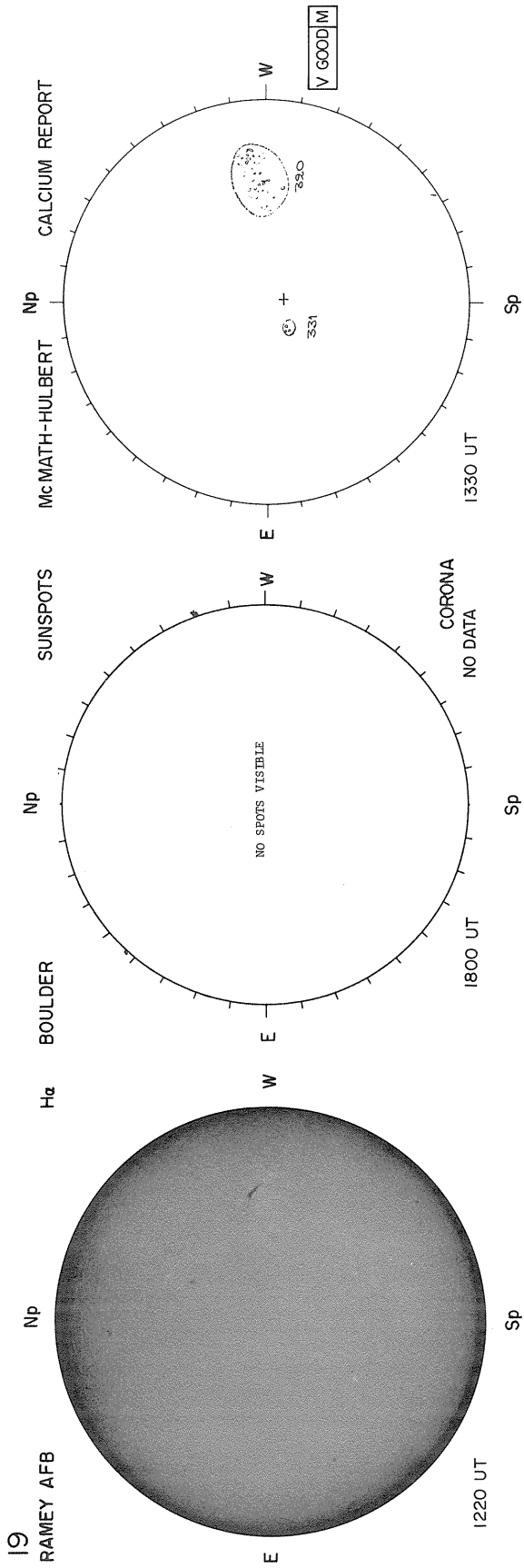
NELC LA POSTA

8.6 MM

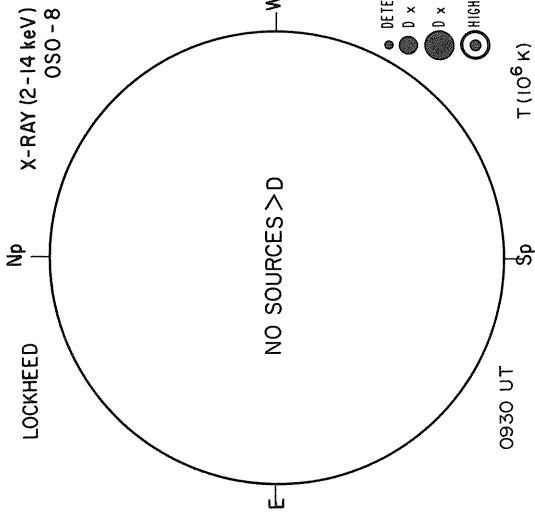


JULY 19, 1976 (P = 5.45, B₀ = 4.75, L₀ = 28.44)





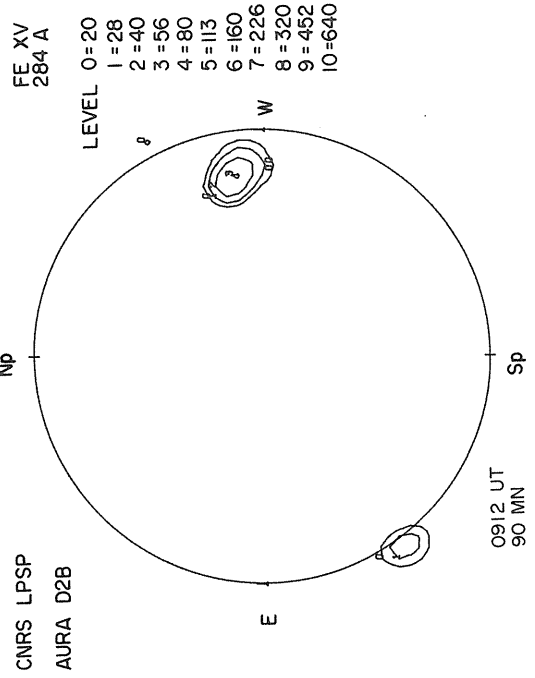
JULY 20, 1976 (P = 5.88, B₀ = 4.84, L₀ = 15.20)



- DETECTABLE (D)
- 0 x 20
- 0 x 500
- HIGHLY VARIABLE

KITT PEAK

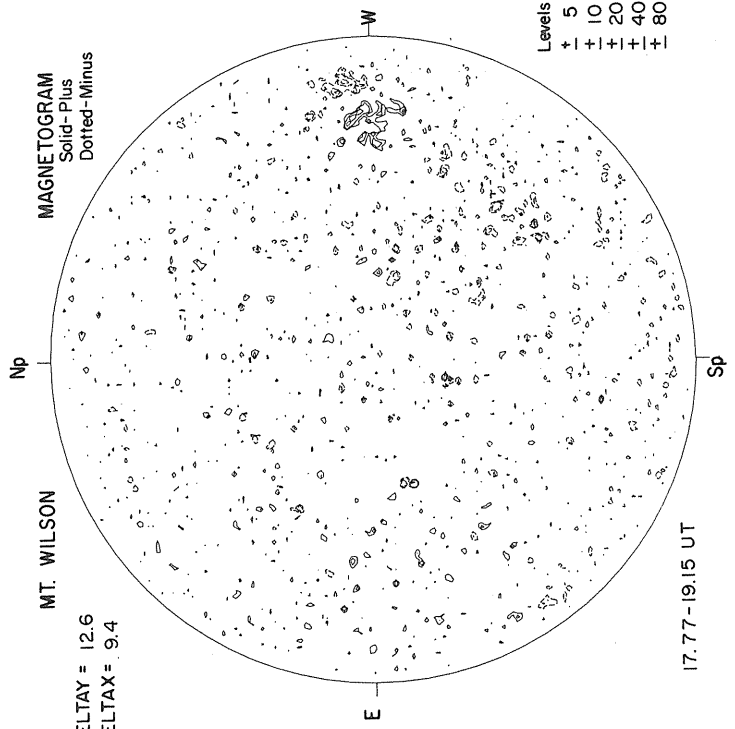
MAGNETOGRAM
Bright - Plus
Dark - Minus



MT. WILSON

MAGNETOGRAM
Solid - Plus
Dotted - Minus

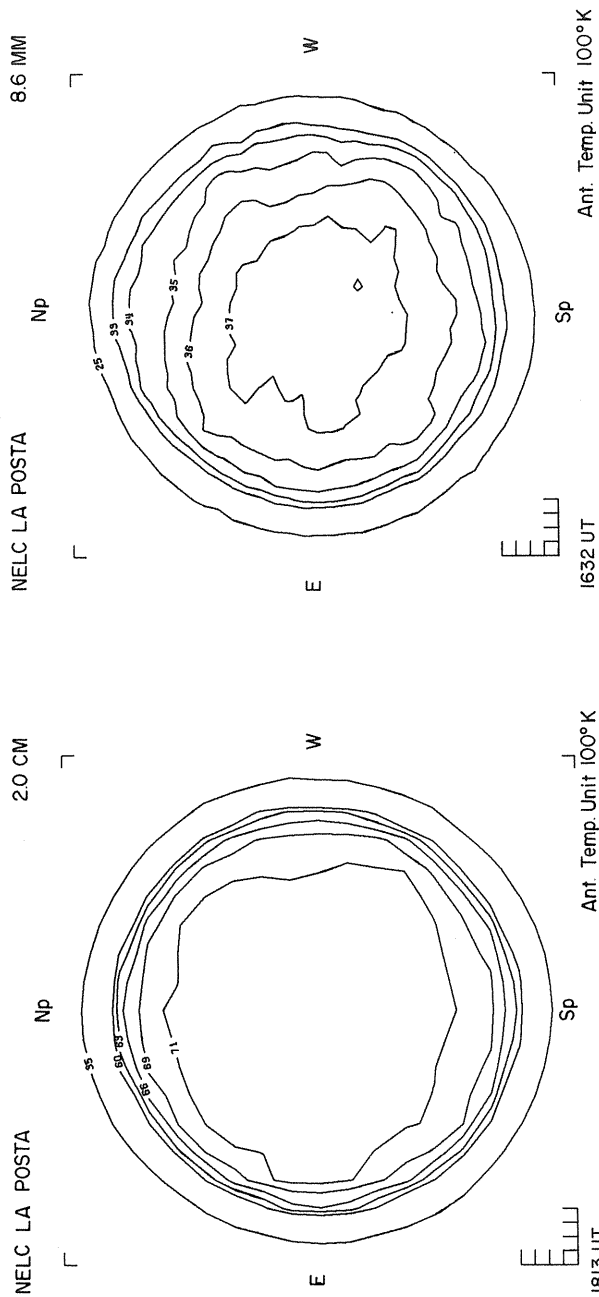
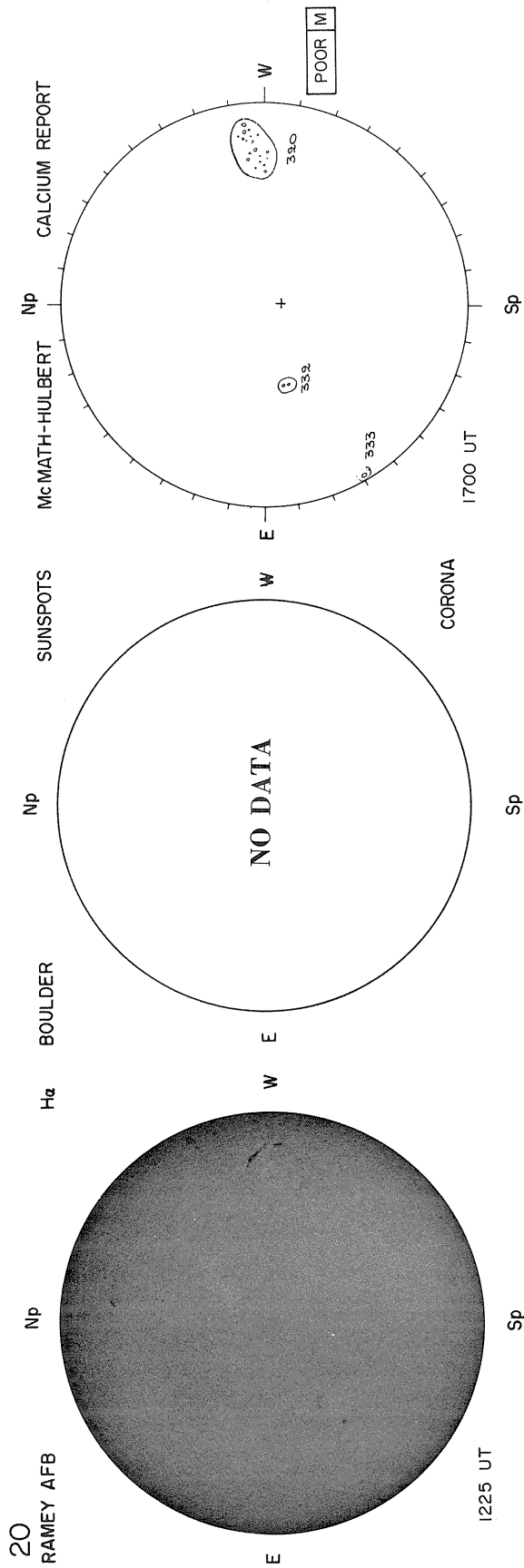
DELTA Y = 12.6
DELTA X = 9.4



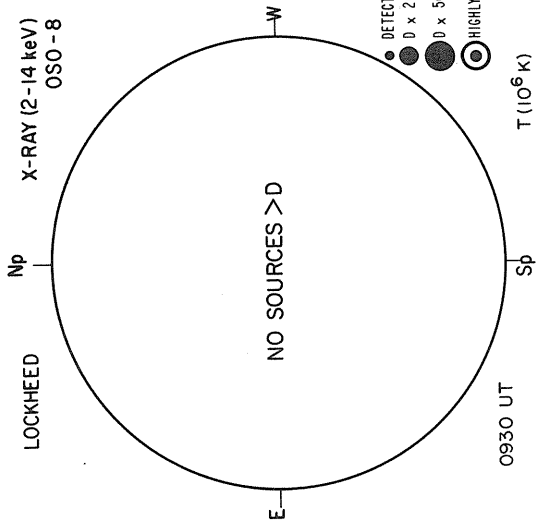
W

E

Sp



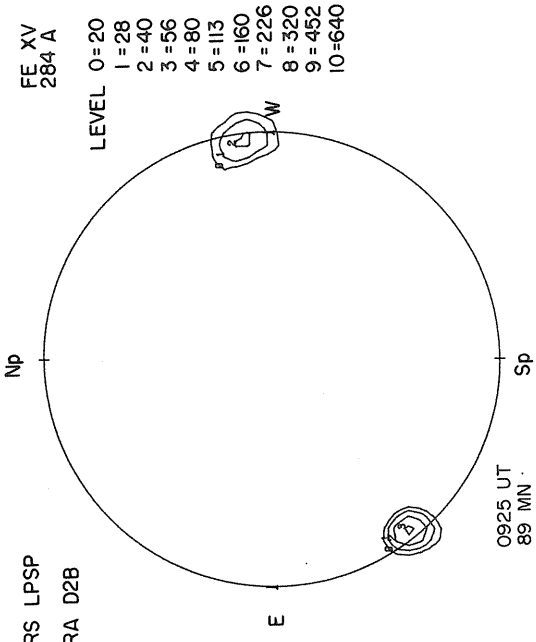
JULY 21, 1976 (P = 6.31, B₀ = 4.93, L₀ = 1.97)



- DETECTABLE (D)
- 0 x 20
- 0 x 500
- HIGHLY VARIABLE

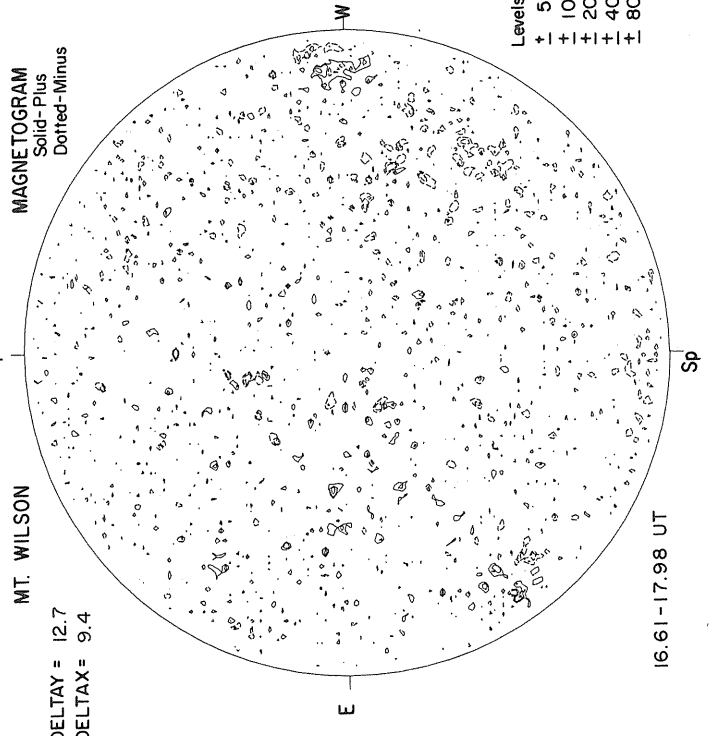
T (10⁶ K)

MAGNETOGRAM
Bright- Plus
Dark - Minus

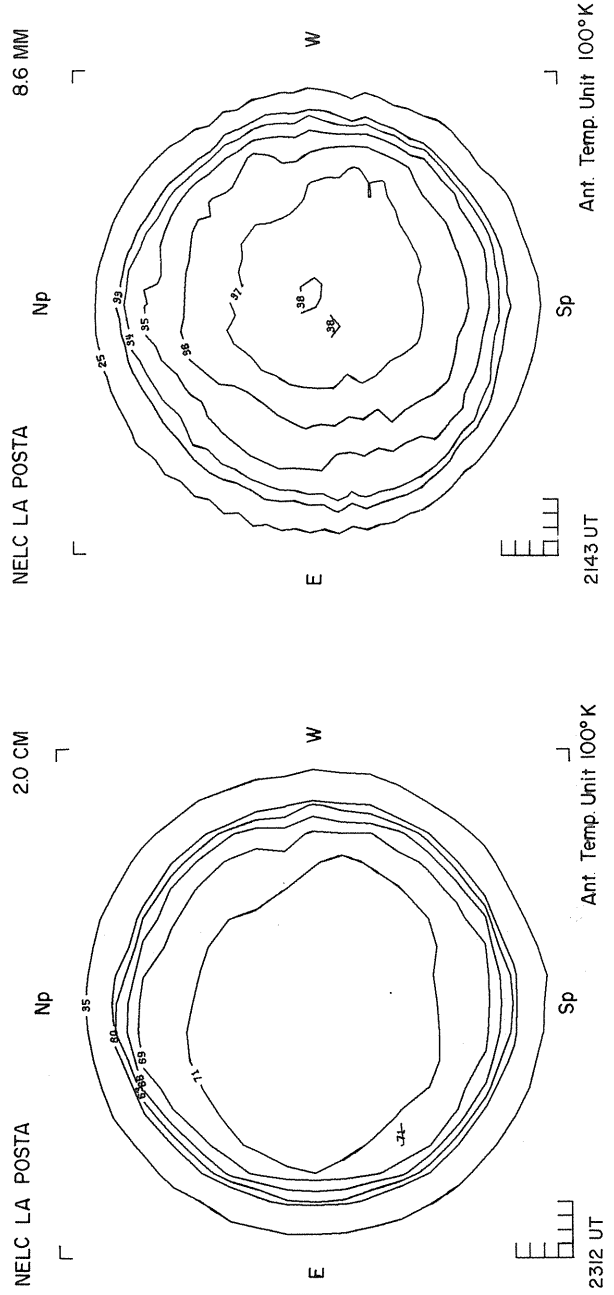
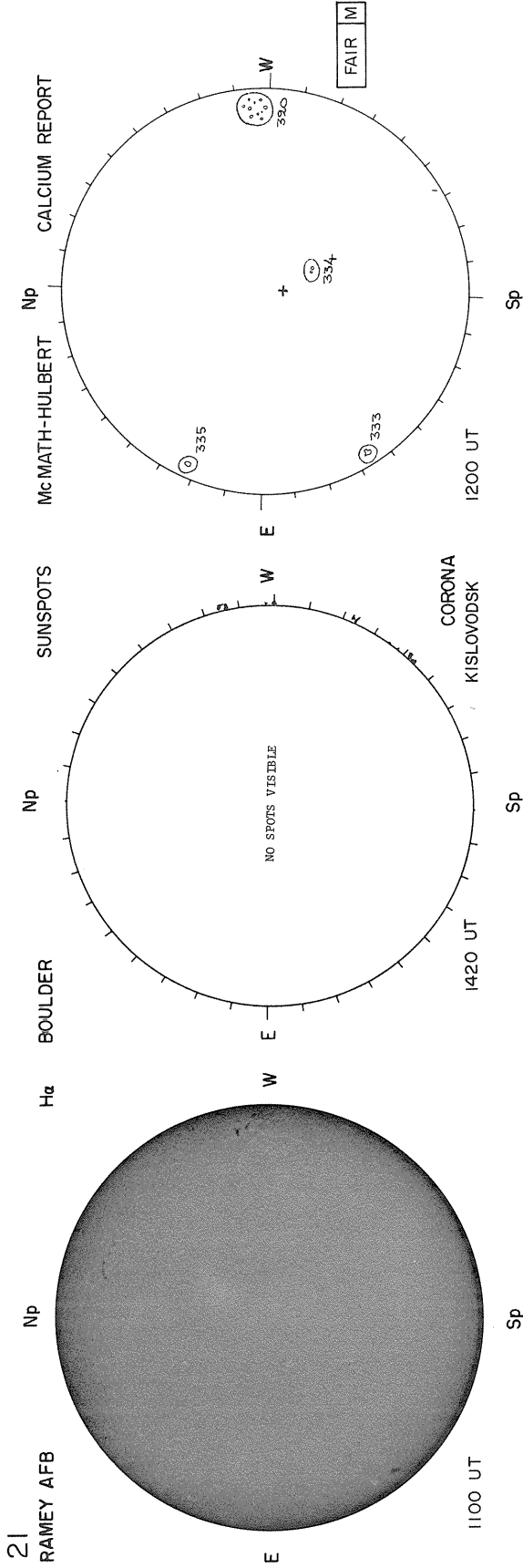


MAGNETOGRAM
Solid- Plus
Dotted- Minus

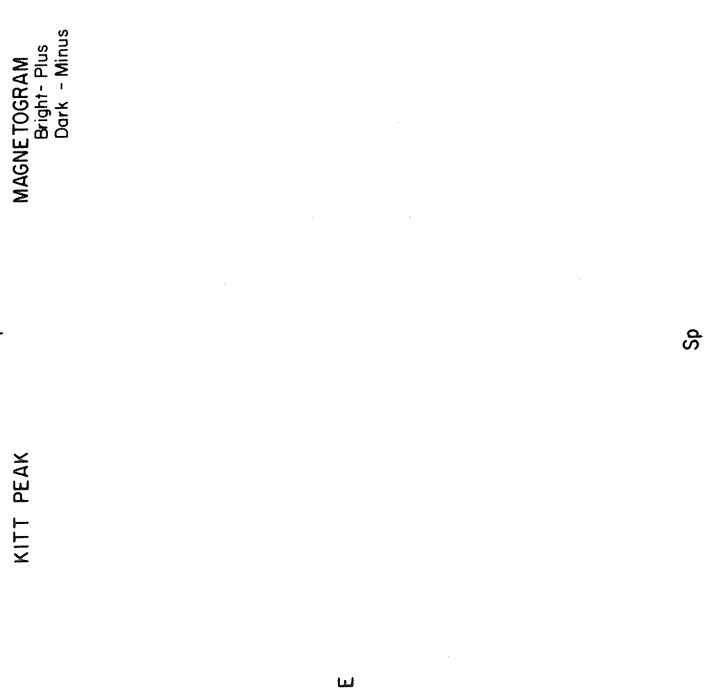
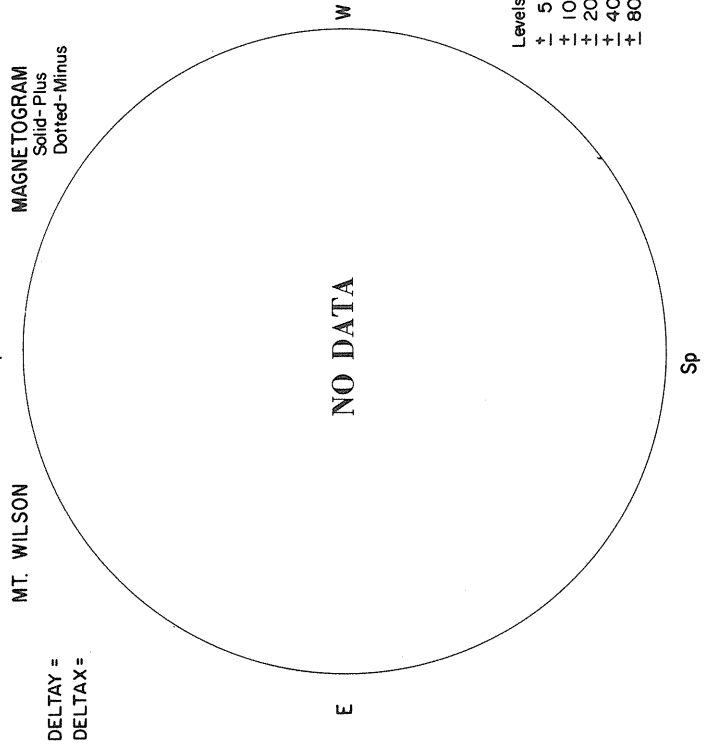
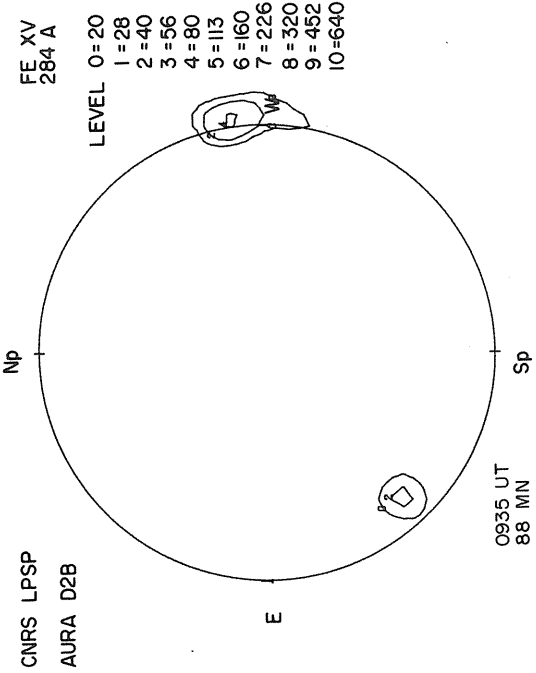
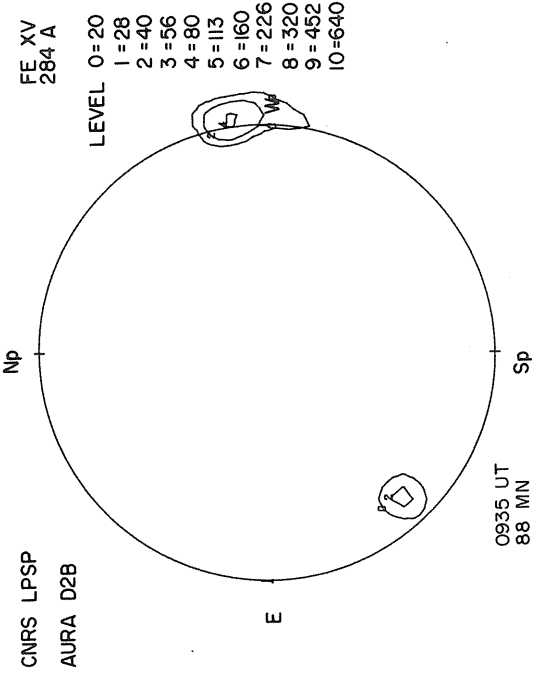
MT. WILSON
DELTA Y = 12.7
DELTA X = 9.4



Sp



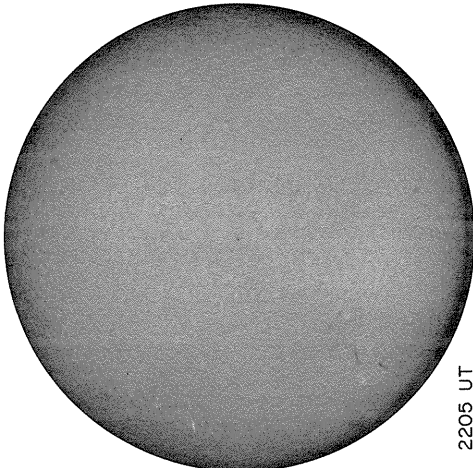
JULY 22, 1976 (P = 6.74, B₀ = 5.02, L₀ = 348.74)



22

RAMEY AFB

Np



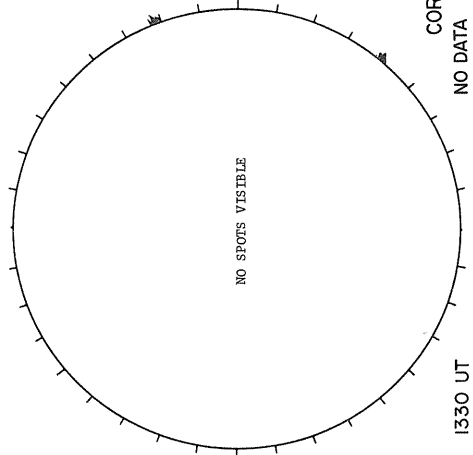
E

2205 UT

Sp

H_z BOULDER

Np



W

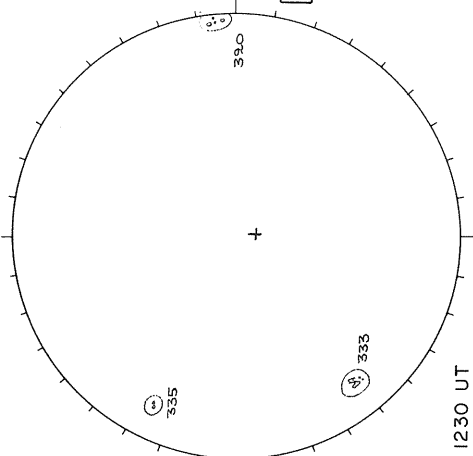
E

1330 UT

Sp

SUNSPOTS

Np



E

W

1230 UT

Sp

Mc MATH-HULBERT

CALCIUM REPORT

NELC LA POSTA

┌

Np

NO DATA

WEATHER

E

Sp



----- UT

2.0 CM

┌

NELC LA POSTA

┌

Np

NO DATA

CALIBRATION

E

Sp



1747 UT

8.6 MM

┌

NELC LA POSTA

┌

Np

NO DATA

CALIBRATION

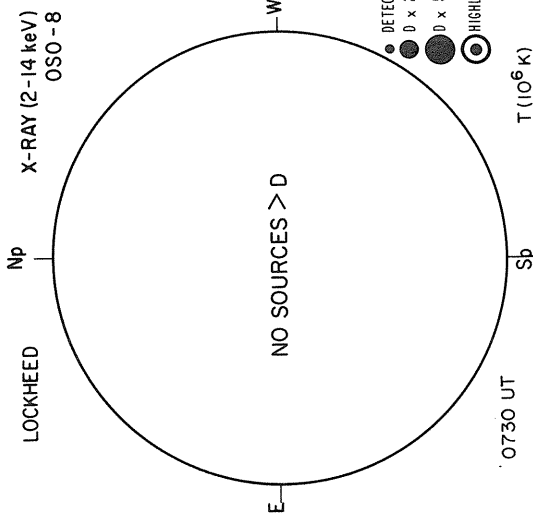
W

Sp

Ant. Temp. Unit 100°K

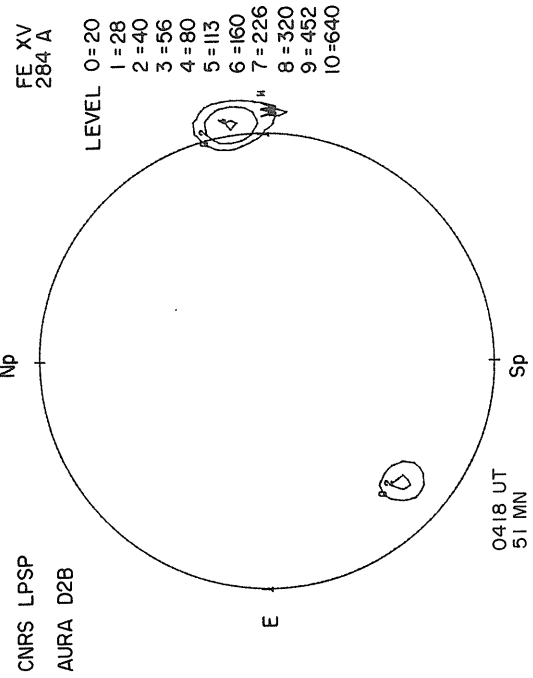


JULY 23, 1976 (P = 7.17, B₀ = 5.10, L₀ = 335.51)



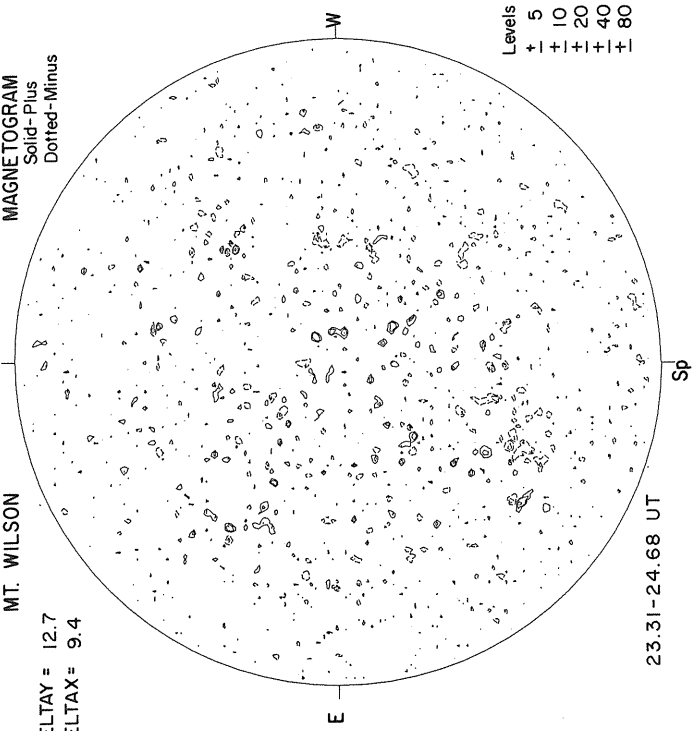
- DETECTABLE (D)
- 0 x 20
- 0 x 500
- HIGHLY VARIABLE

KITT PEAK
MAGNETOGRAM
Bright - Plus
Dark - Minus



MT. WILSON
MAGNETOGRAM
Solid - Plus
Dotted - Minus

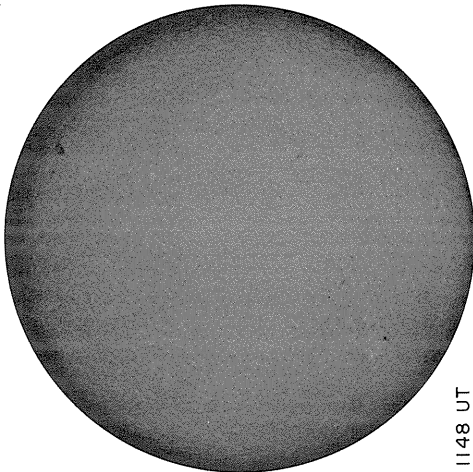
DELTA Y = 12.7
DELTA X = 9.4



Sp

23
RAMEY AFB

Np



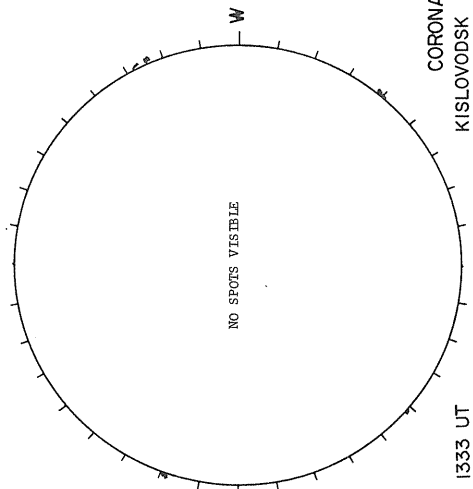
E

1148 UT

Sp

H α BOULDER

Np



W

E

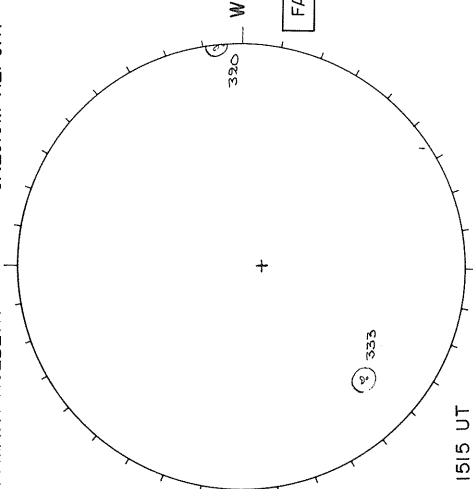
1333 UT

Sp

CORONA
KISLOVODSK

SUNSPOTS

Np



E

W

1515 UT

Sp

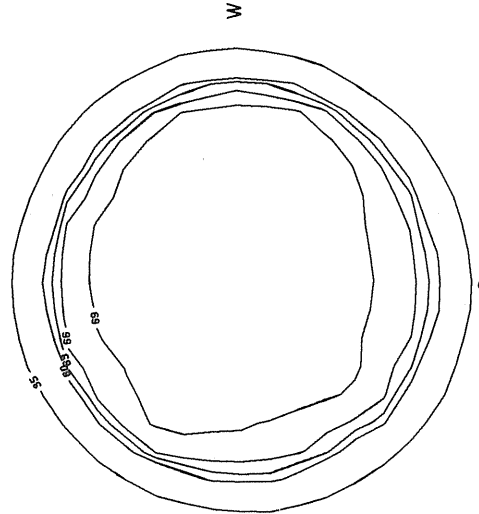
McMATH-HULBERT
CALCIUM REPORT

FAIR M

NELC LA POSTA

Γ

Np



E

W

1607 UT

Sp

Ant. Temp. Unit 100°K

NELC LA POSTA

Γ

Np

NO DATA

CLOUDY

1730 UT

Sp

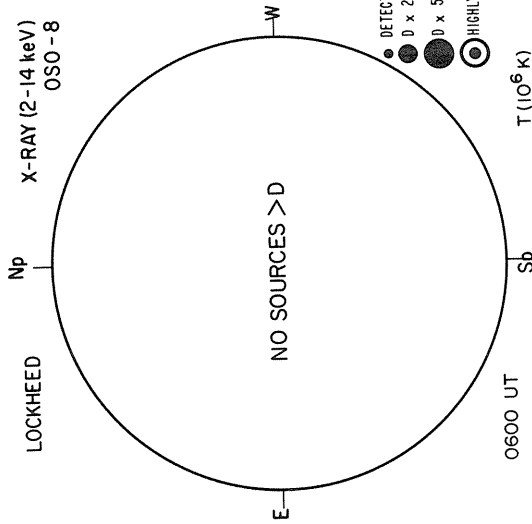
Ant. Temp. Unit 100°K

8.6 MM

Γ

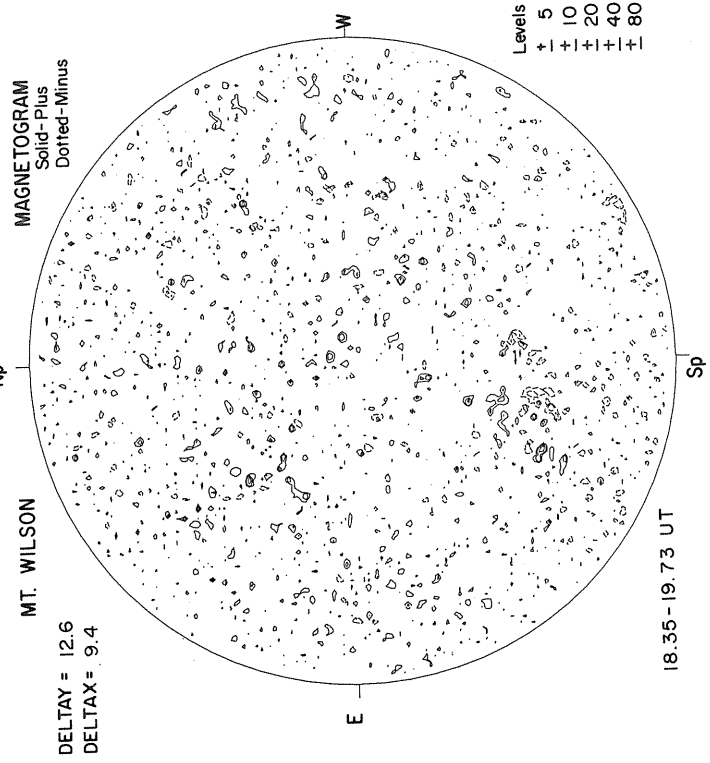
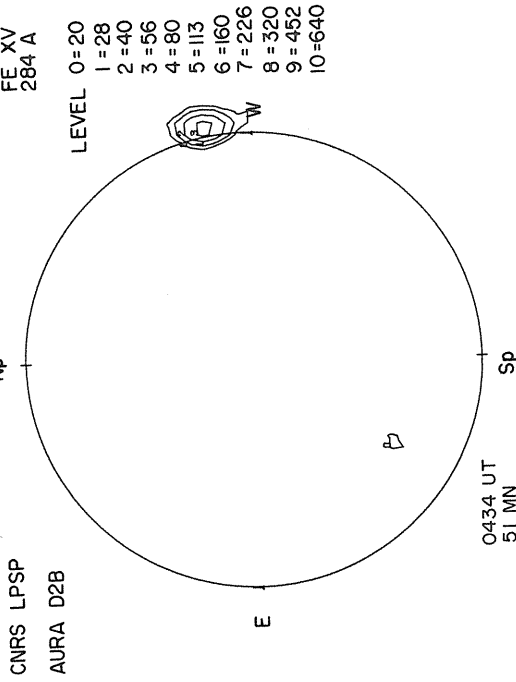
W

JULY 24, 1976 (P = 7.60, B₀ = 5.19, L₀ = 322.29)



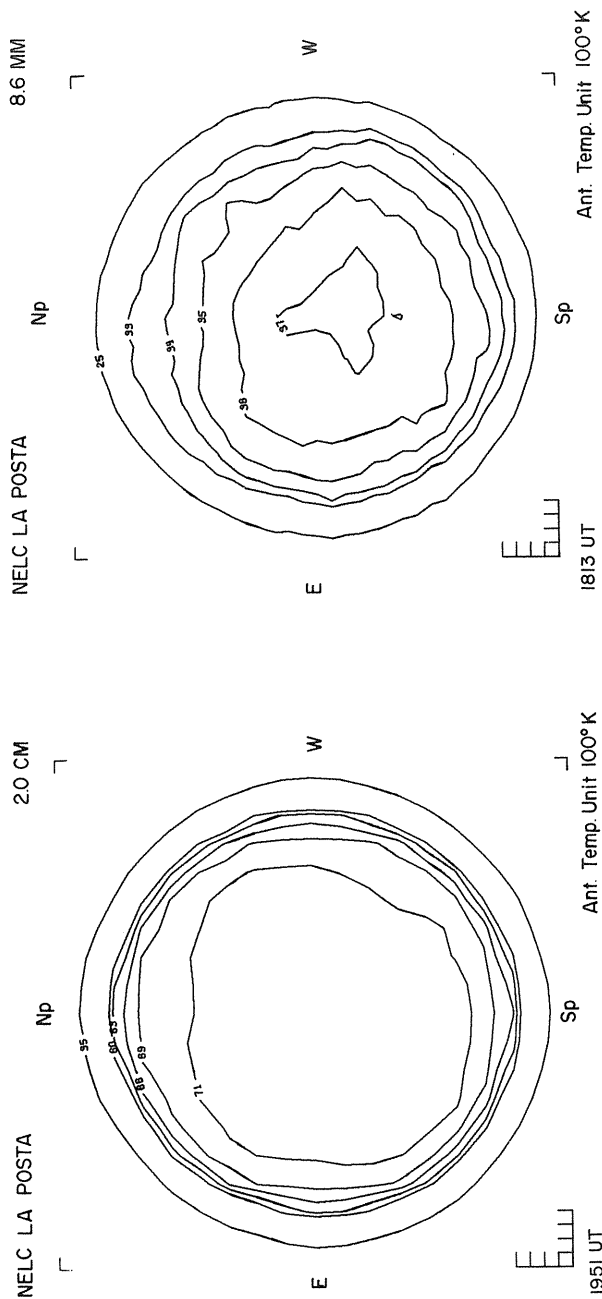
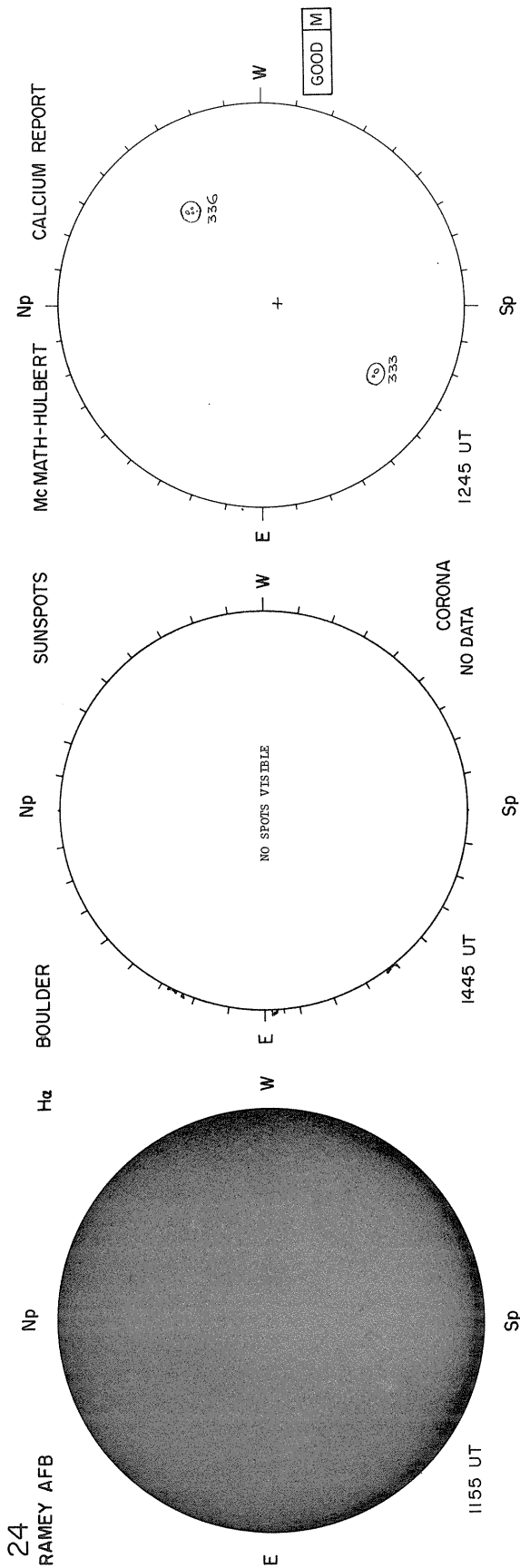
KITT PEAK

MAGNETOGRAM
Bright - Plus
Dark - Minus

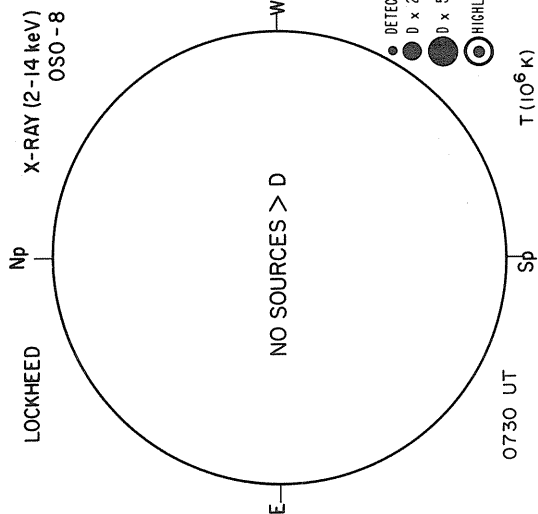


Sp

E

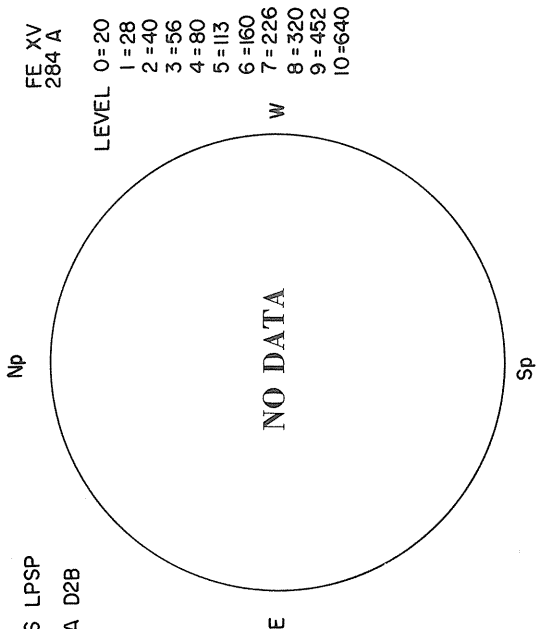


JULY 25, 1976 (P = 8.02, B₀ = 5.27, L₀ = 309.06)



- DETECTABLE (0)
- 0 x 20
- 0 x 500
- ⊙ HIGHLY VARIABLE

MAGNETOGRAM
Bright - Plus
Dark - Minus

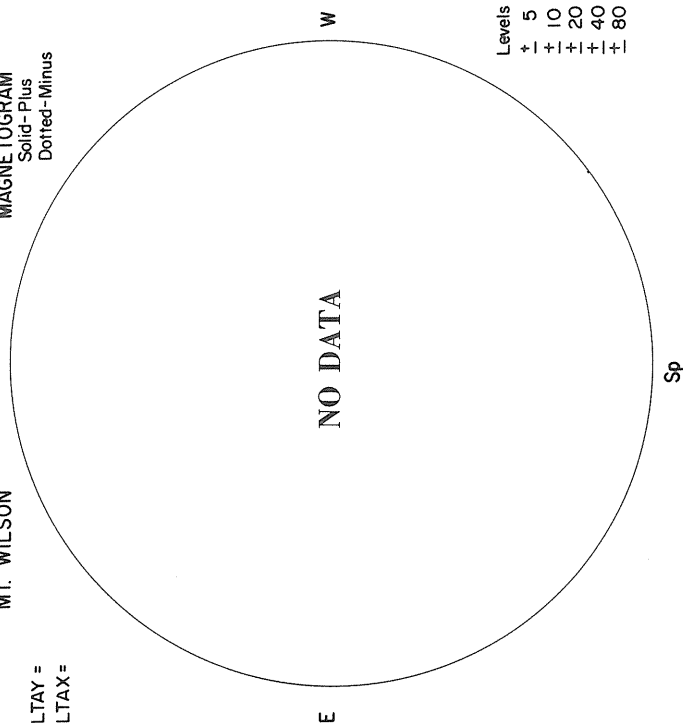


- FE XV
284 A
- LEVEL 0=20
1=28
2=40
3=56
4=80
5=113
6=160
7=226
8=320
9=452
10=640

MAGNETOGRAM
Solid-Plus
Dotted-Minus

MT. WILSON

DELTA Y =
DELTA X =

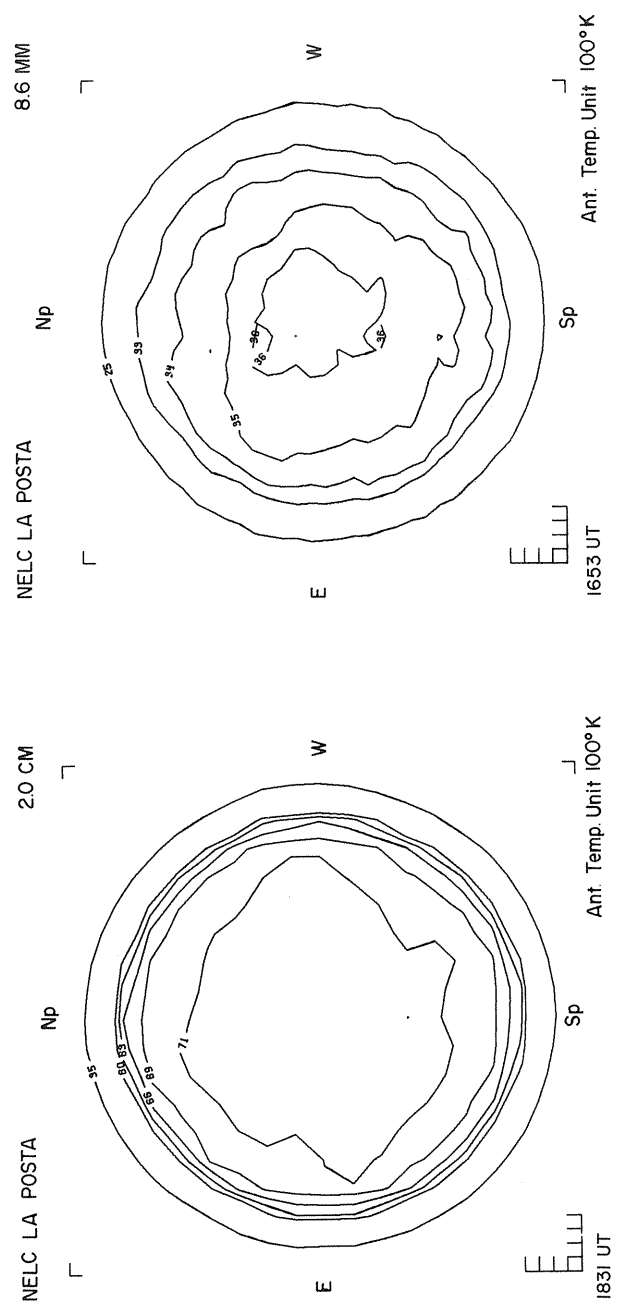
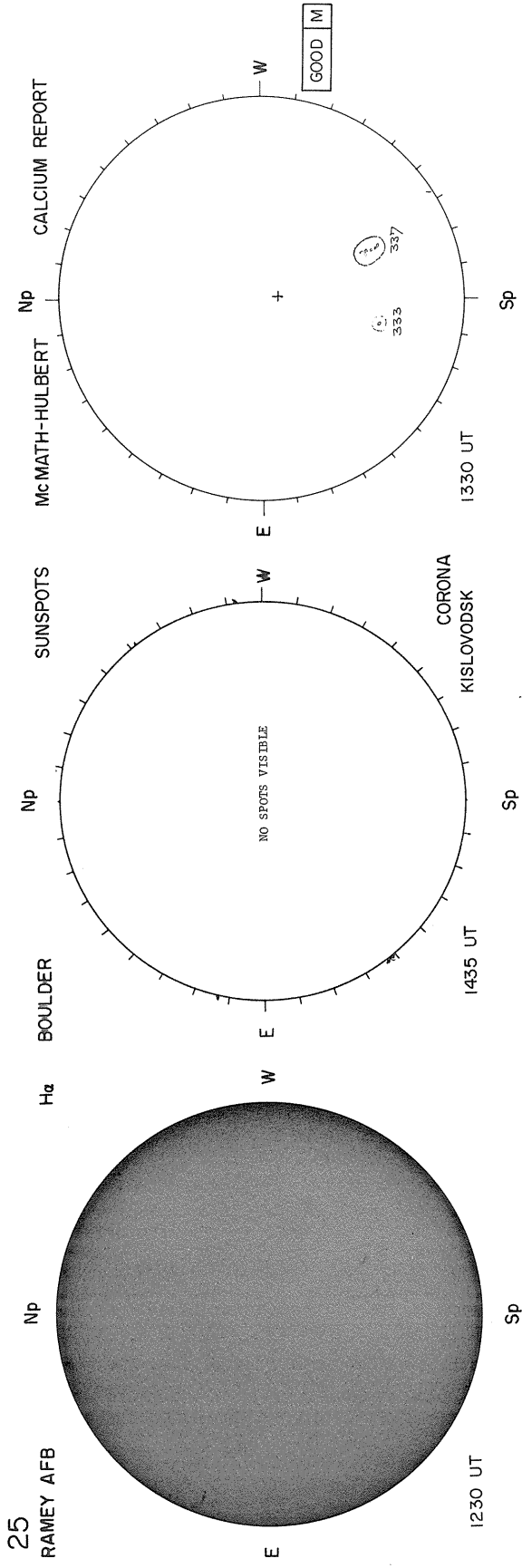


- Levels
+ 5
+ 10
+ 20
+ 40
+ 80

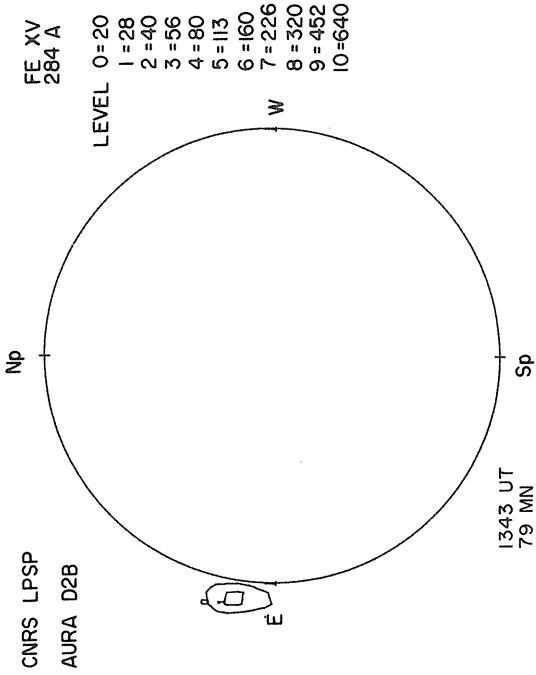
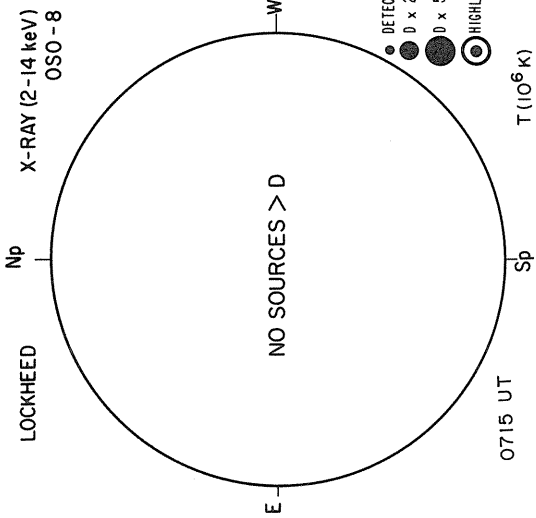
W

E

Sp

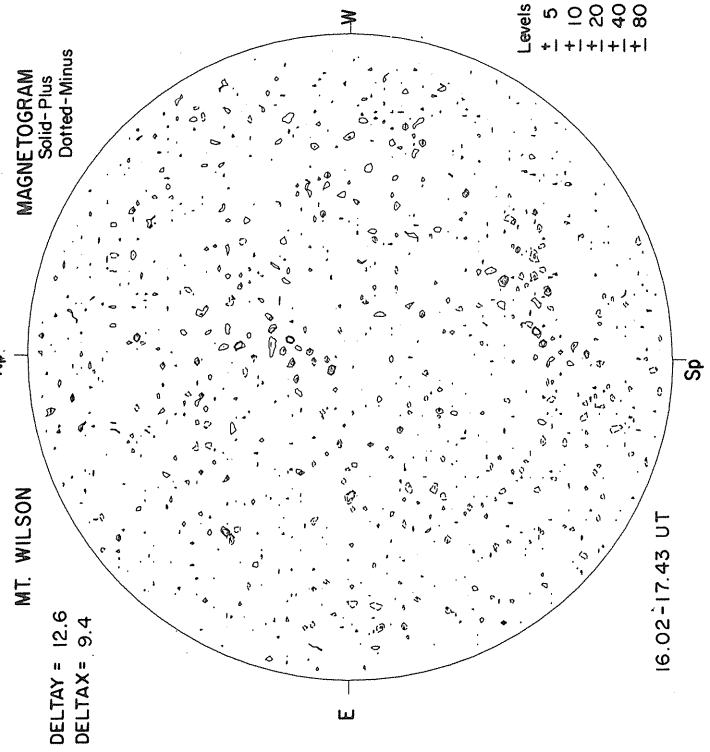


JULY 26, 1976 (P = 8.44, B₀ = 5.36, L₀ = 295.83)



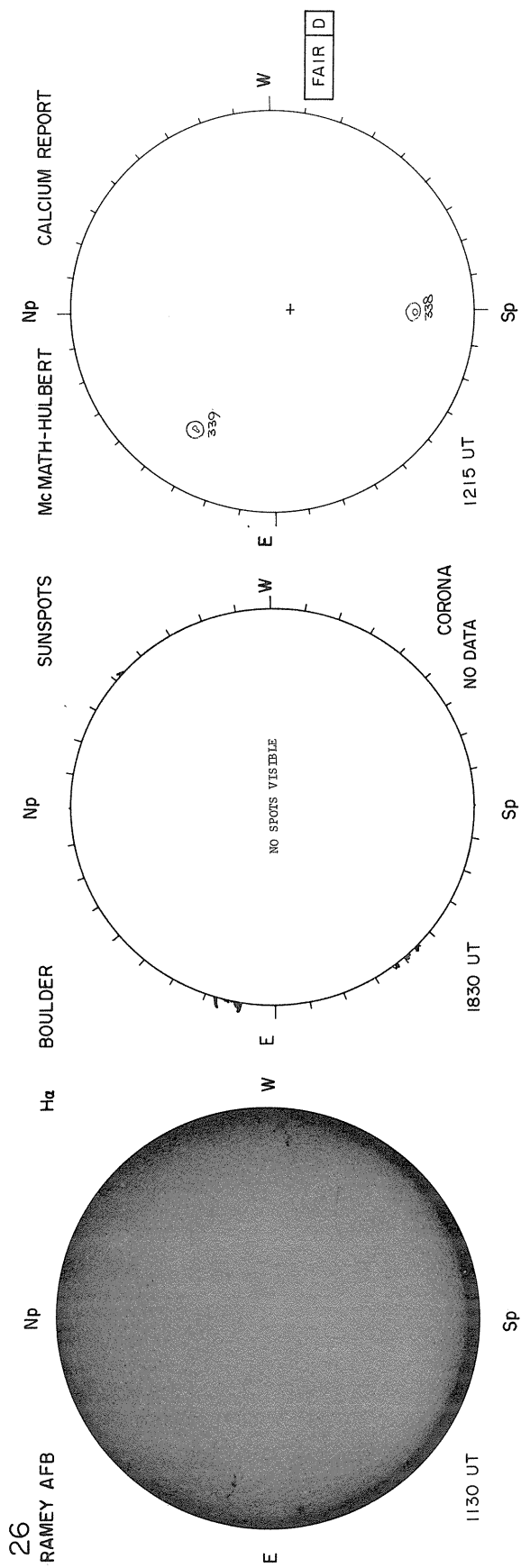
KITT PEAK

MAGNETOGRAM
Bright - Plus
Dark - Minus



E W

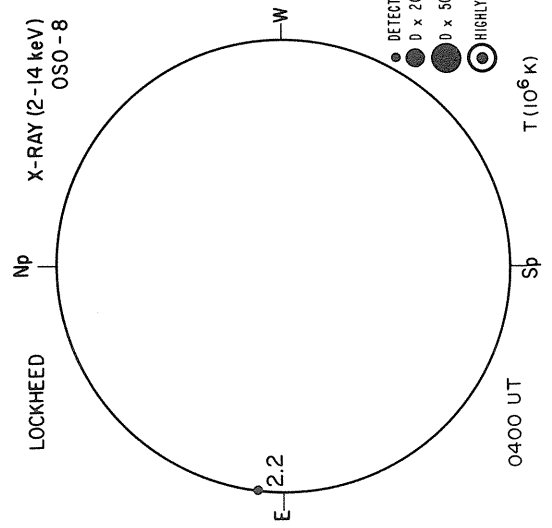
Sp



Station	Time (UT)	Observation	Weather	Ant. Temp. Unit (100°K)
NELC LA POSTA	1130 UT	NO DATA	WEATHER	Sp
Boulder	1830 UT	NO SPOTS VISIBLE	WEATHER	Sp
Mc MATH-HULBERT	1215 UT	SUNSPOTS 339, 338	WEATHER	Sp
NELC LA POSTA	1830 UT	2.0 CM	WEATHER	Sp
NELC LA POSTA	1215 UT	8.6 MM	WEATHER	Sp

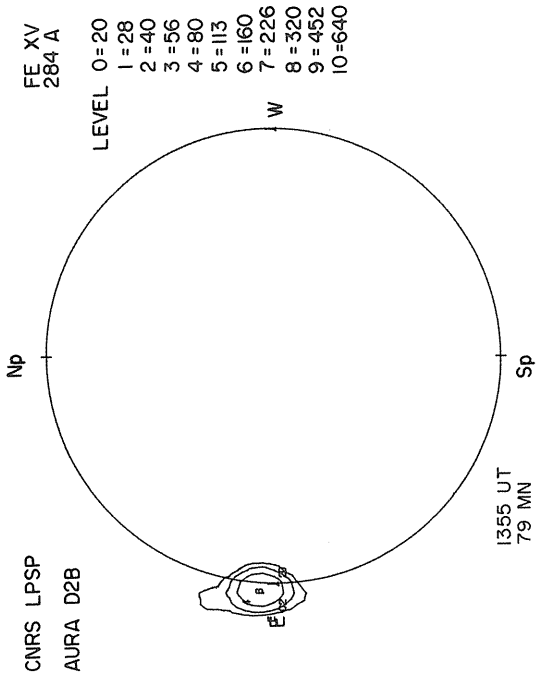


JULY 27, 1976 (P = 8.85, B₀ = 5.44, L₀ = 282.60)



● DETECTABLE (0)
○ 0 x 20
○ 0 x 500
○ HIGHLY VARIABLE

MAGNETOGRAM
Bright - Plus
Dark - Minus

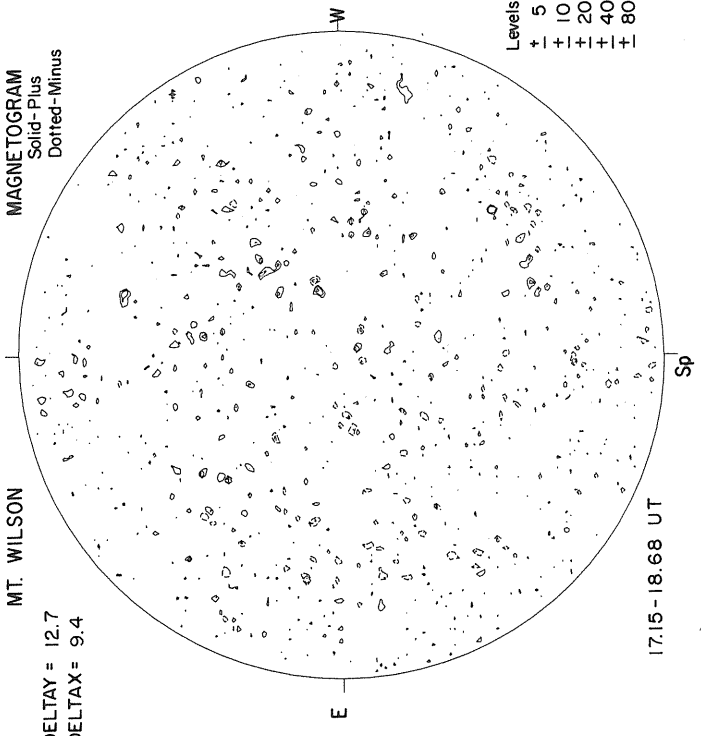


FE XV
284 A

LEVEL 0=20
1=28
2=40
3=56
4=80
5=113
6=160
7=226
8=320
9=452
10=640

MAGNETOGRAM
Solid - Plus
Dotted - Minus

MT. WILSON
DELTAY = 12.7
DELTAX = 9.4

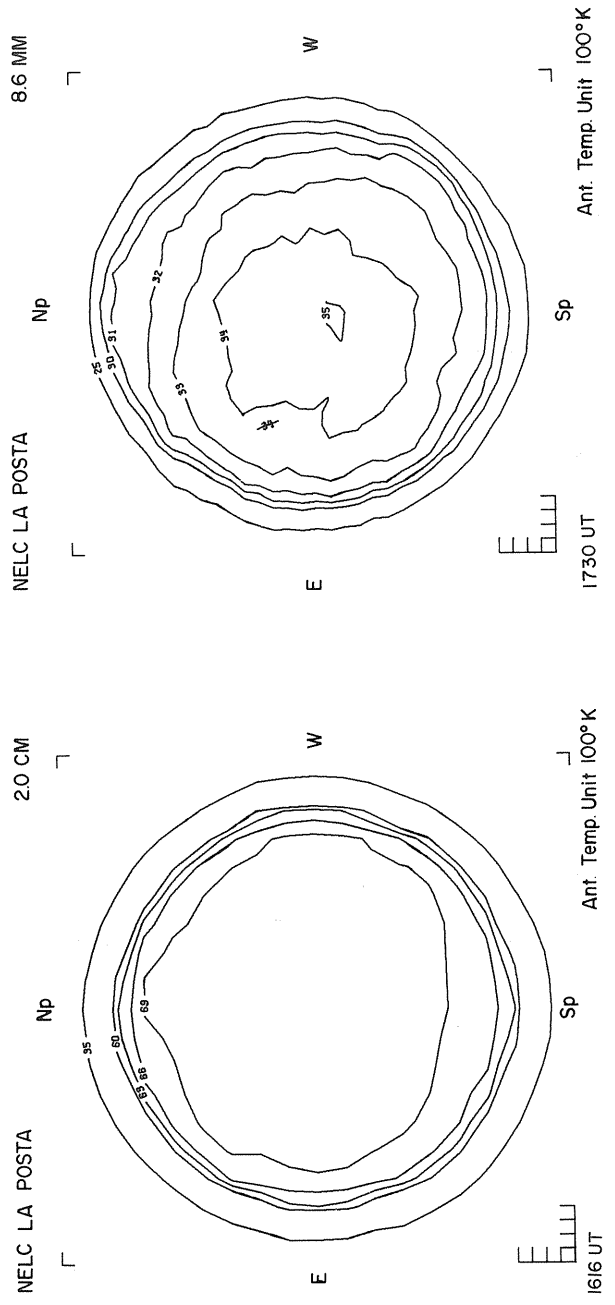
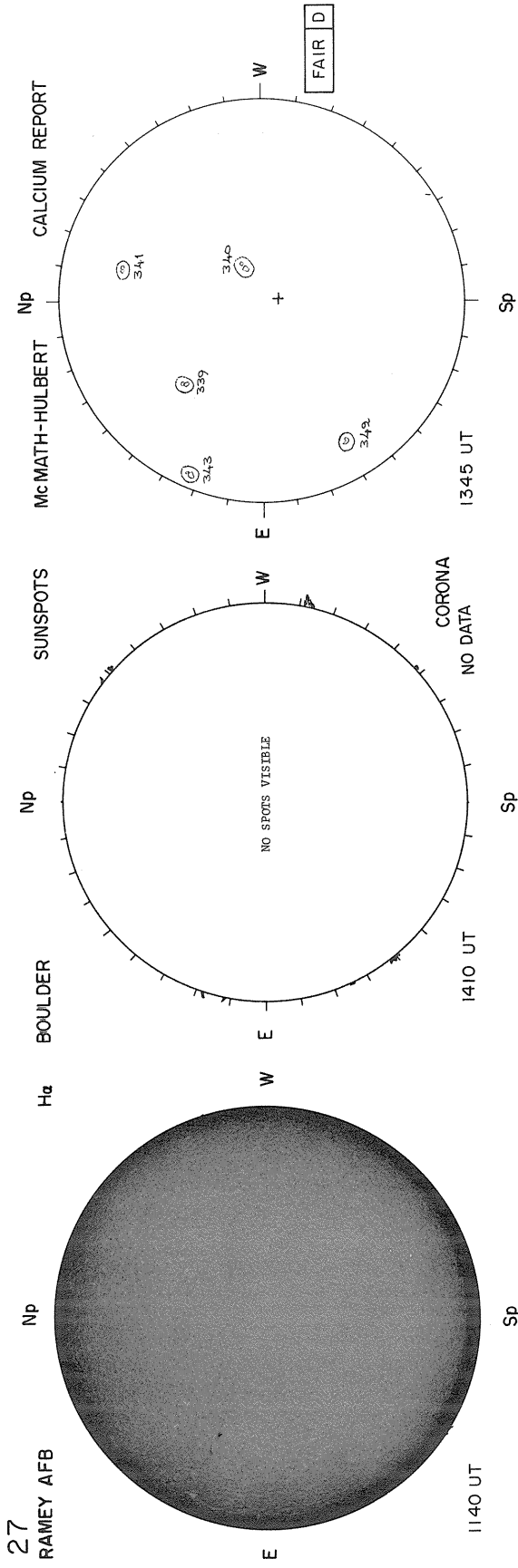


Levels
+ 5
+ 10
+ 20
+ 40
+ 80

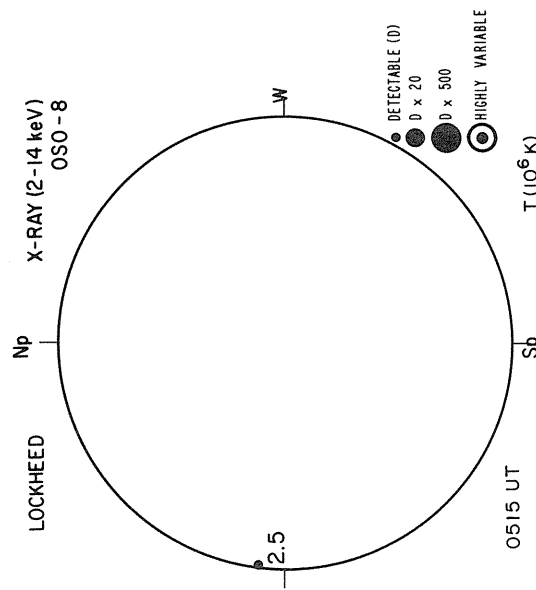
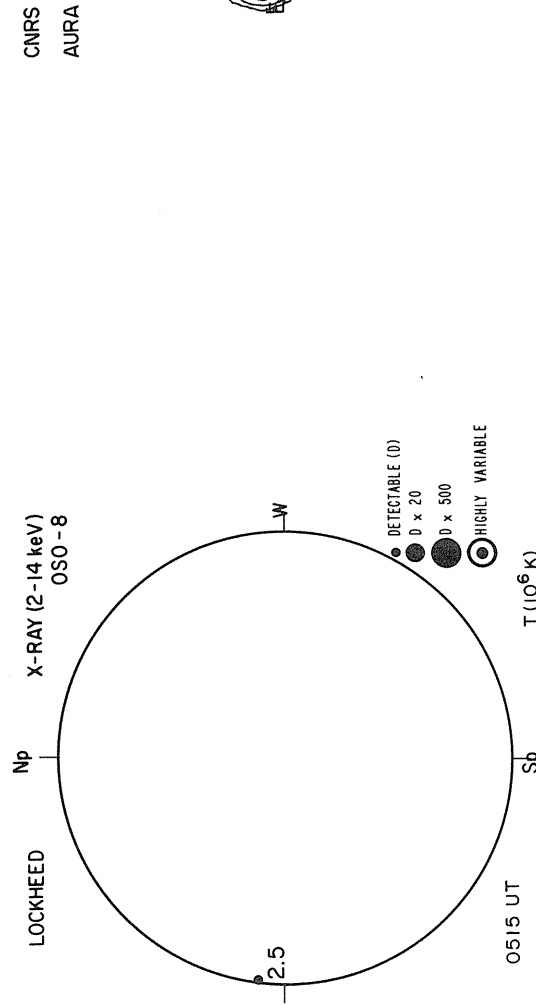
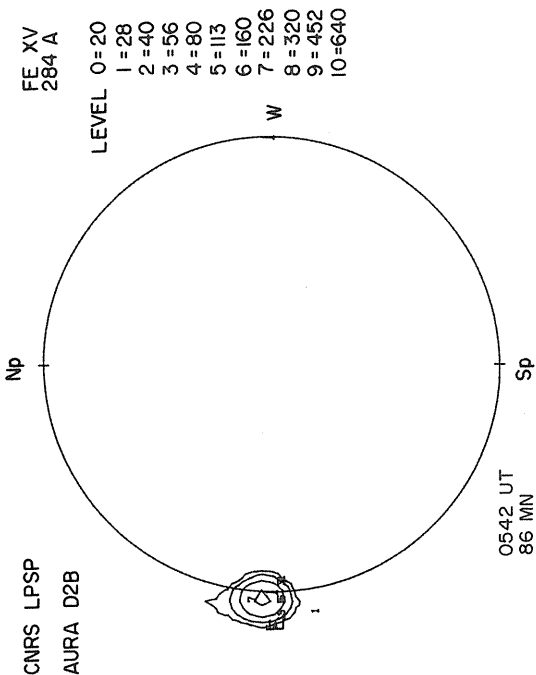
W

E

Sp

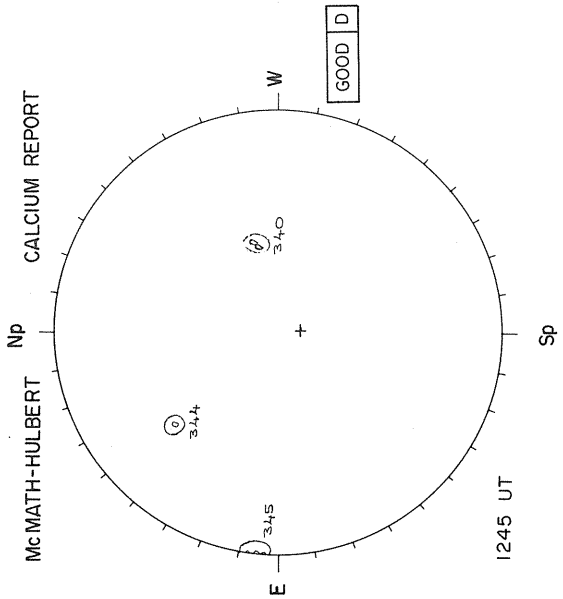
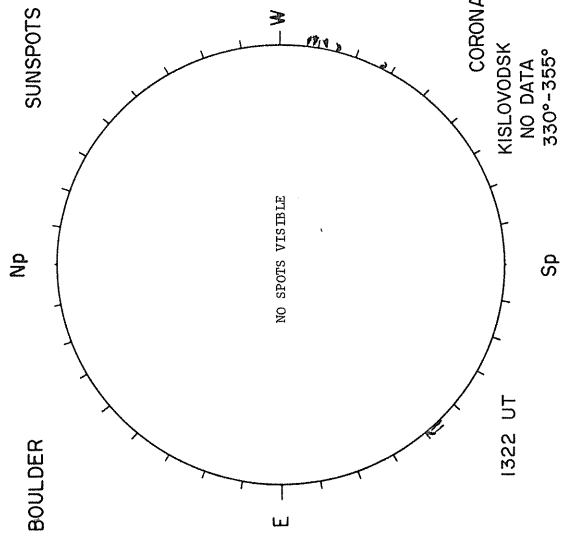
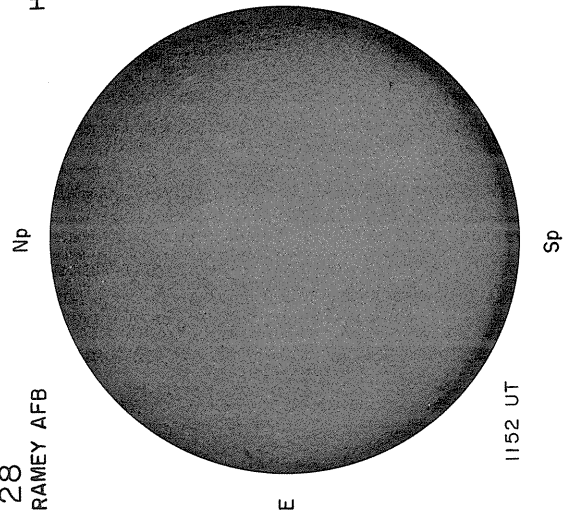


JULY 28, 1976 (P = 9.27, B₀ = 5.52, L₀ = 269.37)

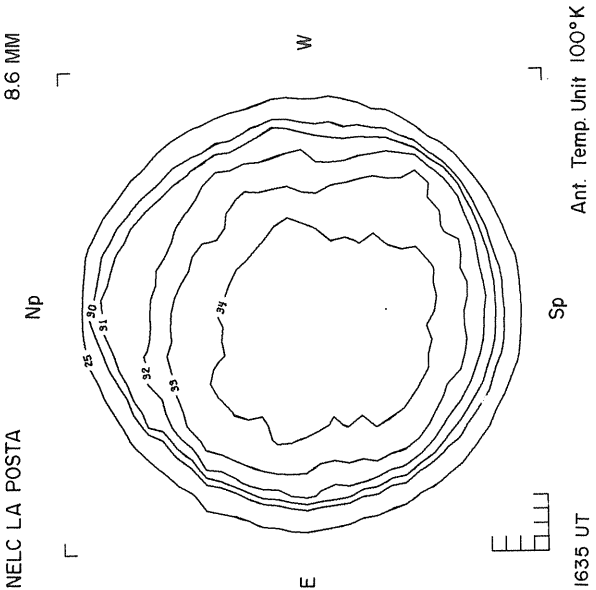
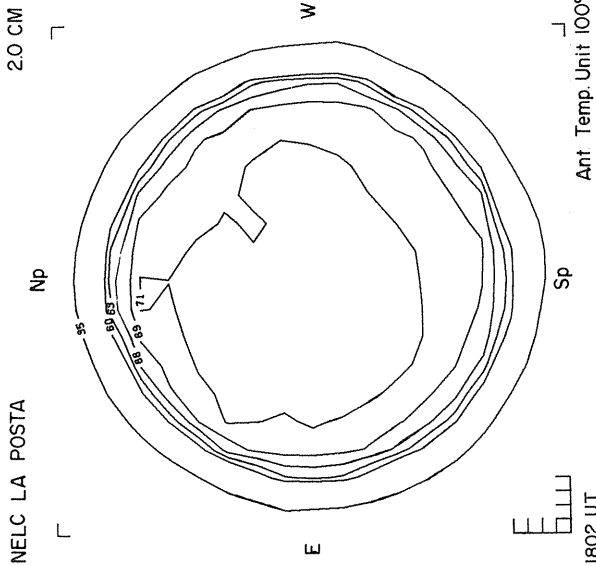


Sp

28
RAMEY AFB



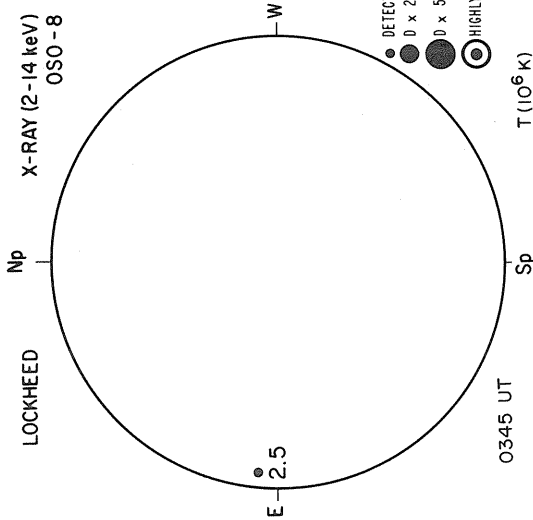
CORONA
KISLOVODSK
NO DATA
330°-355°



Ant. Temp. Unit 100°K

Ant. Temp. Unit 100°K

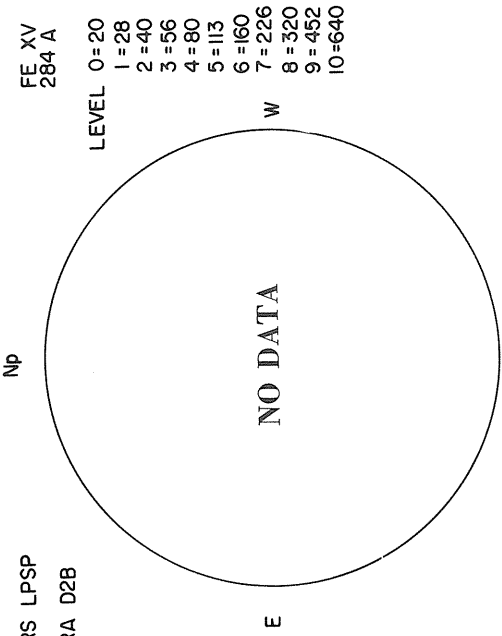
JULY 29, 1976 (P = 9.68, $B_0 = 5.59$, $L_0 = 256.15$)



- DETECTABLE (ID)
- D x 20
- D x 500
- HIGHLY VARIABLE

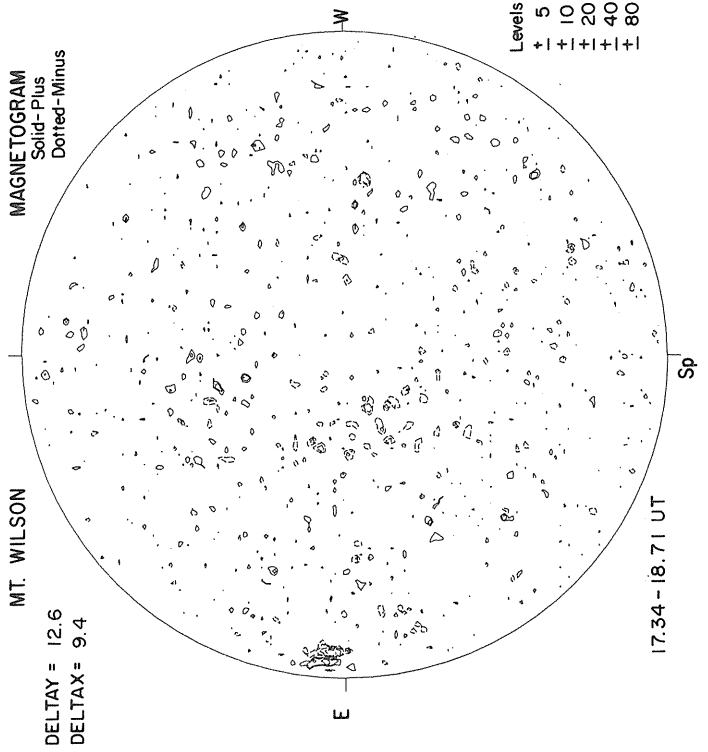
MAGNETOGRAM
Bright-Plus
Dark-Minus

KITT PEAK



- FE XV
284 A
- LEVEL 0=20
1=28
2=40
3=56
4=80
5=113
6=160
7=226
8=320
9=452
10=640

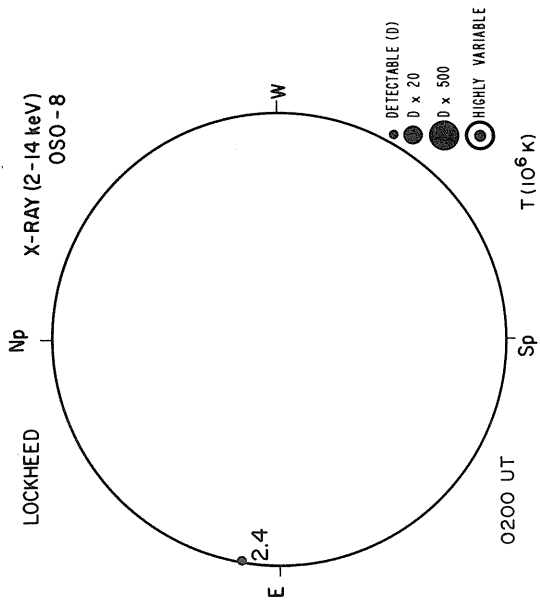
CNRS LPSP
AURA D2B



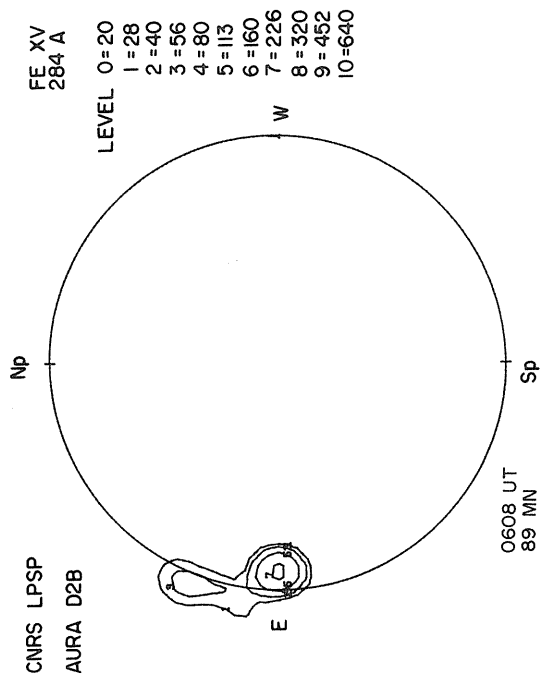
- Levels
- + 5
 - + 10
 - + 20
 - + 40
 - + 80

Sp

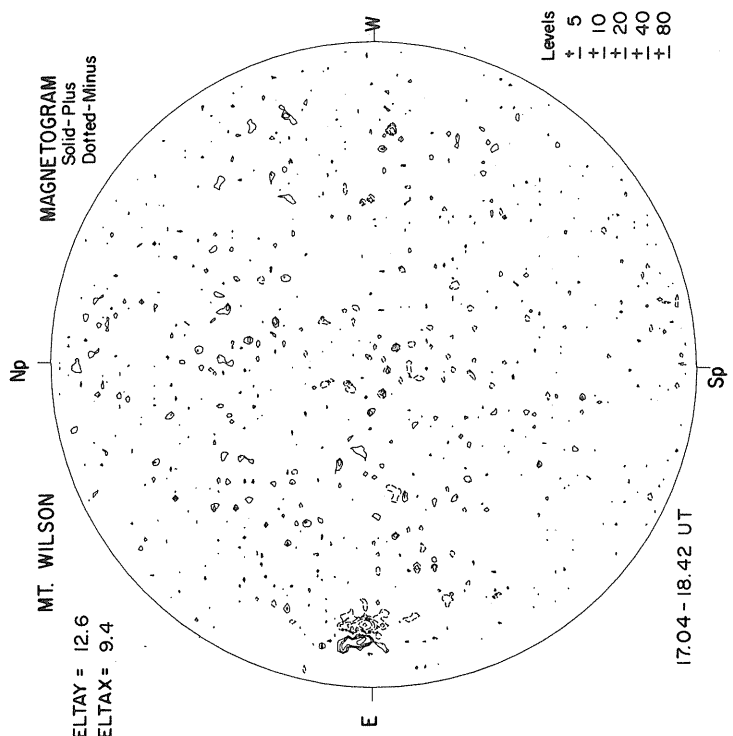
JULY 30, 1976 (P = 10.08, B₀ = 5.67, L₀ = 242.92)



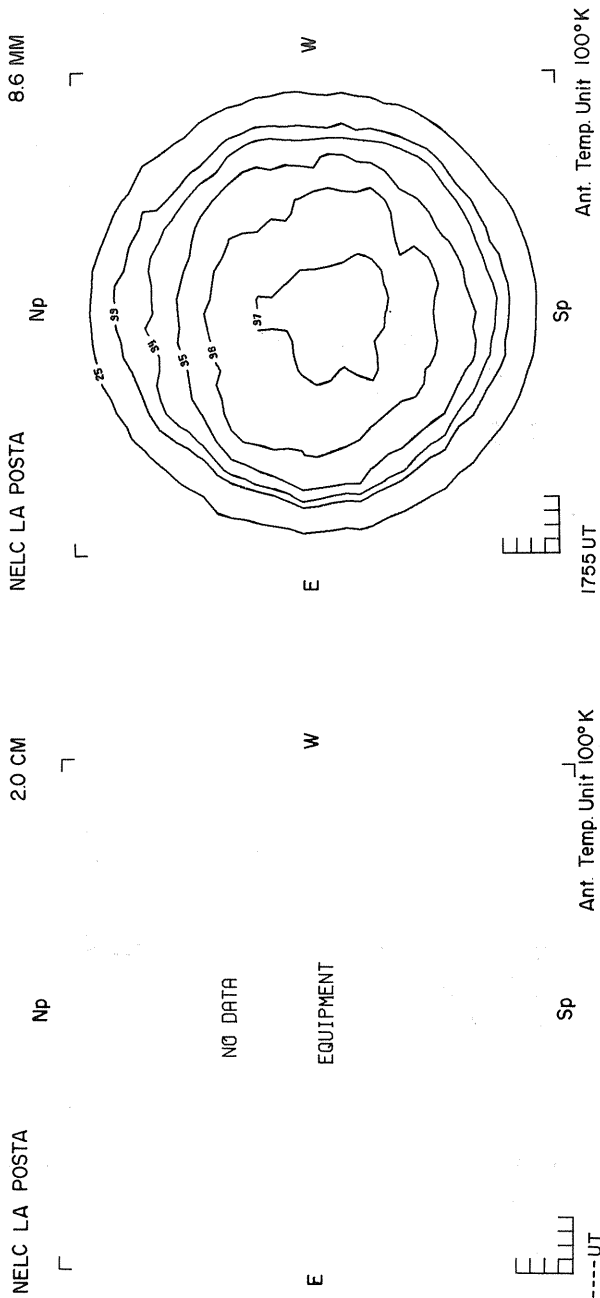
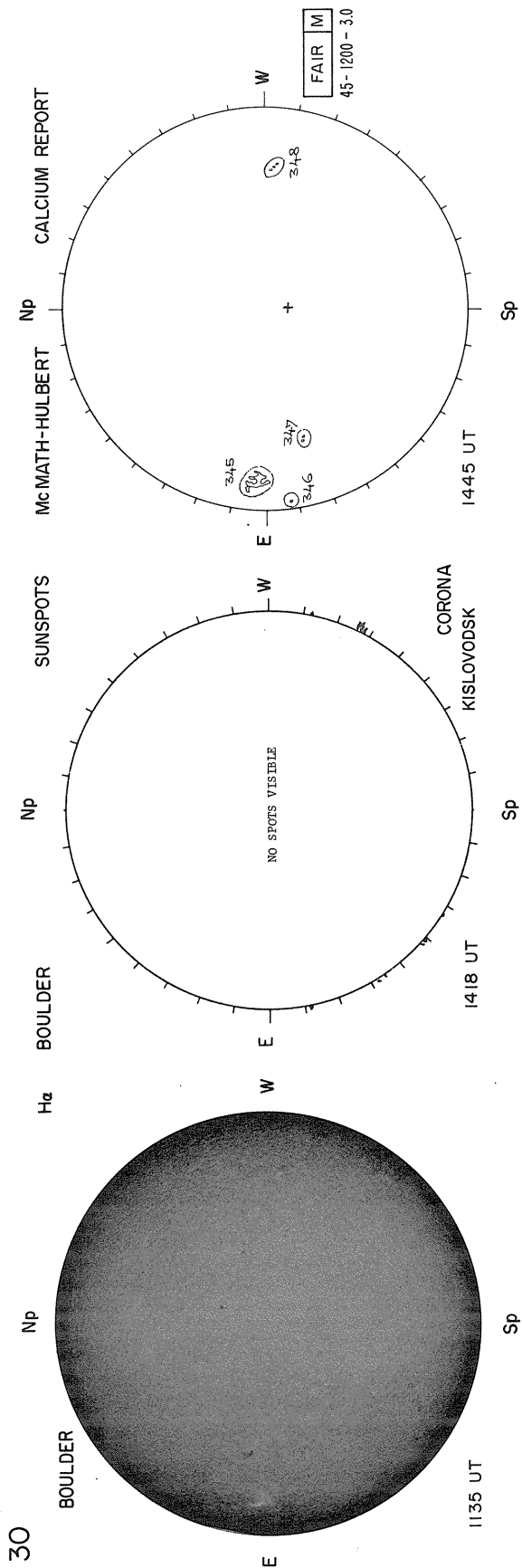
KITT PEAK
MAGNETOGRAM
Bright - Plus
Dark - Minus



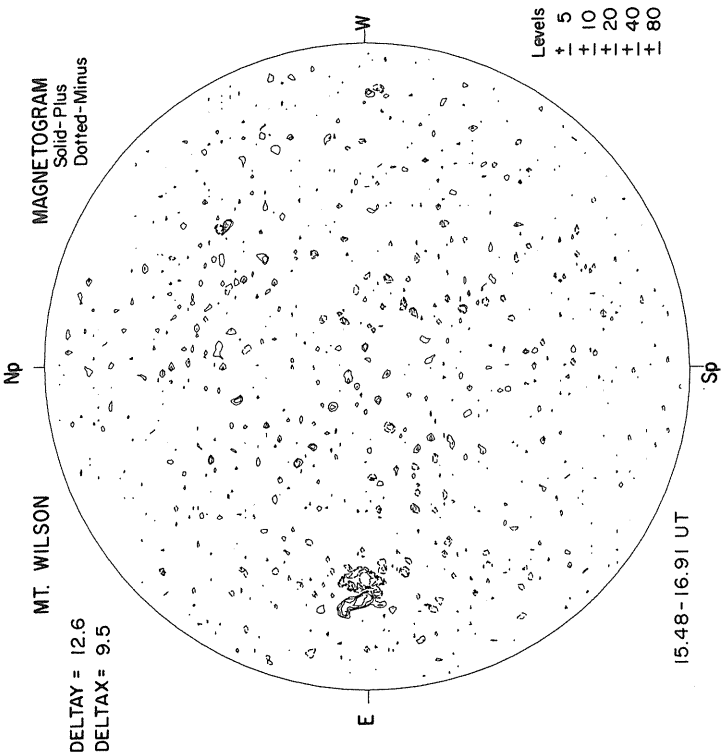
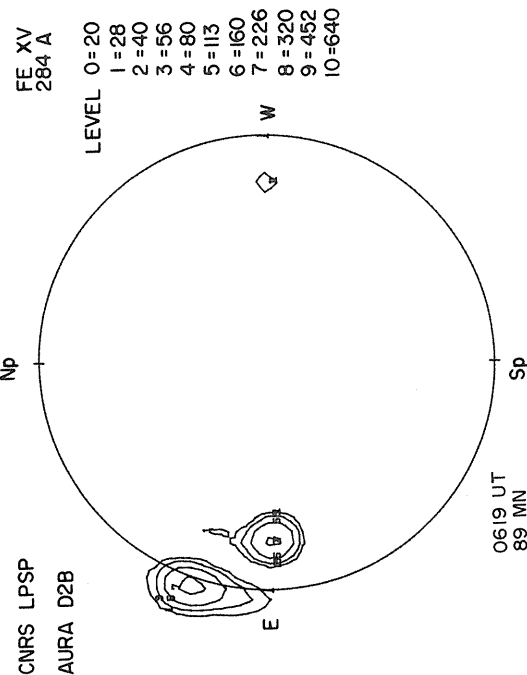
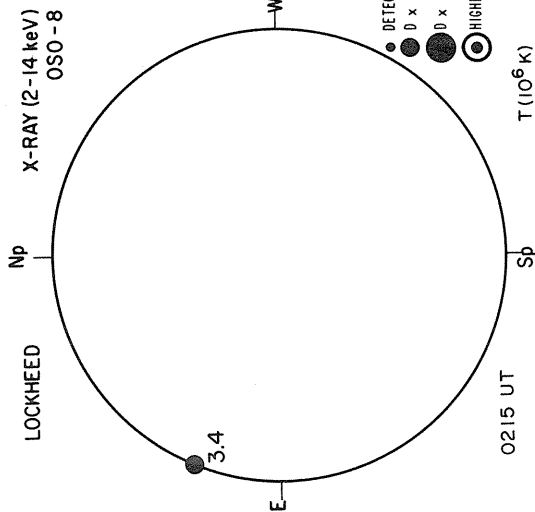
MT. WILSON
DELTA Y = 12.6
DELTA X = 9.4
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Sp



JULY 31, 1976 (P=10.49, B₀=5.74, L₀=229.69)



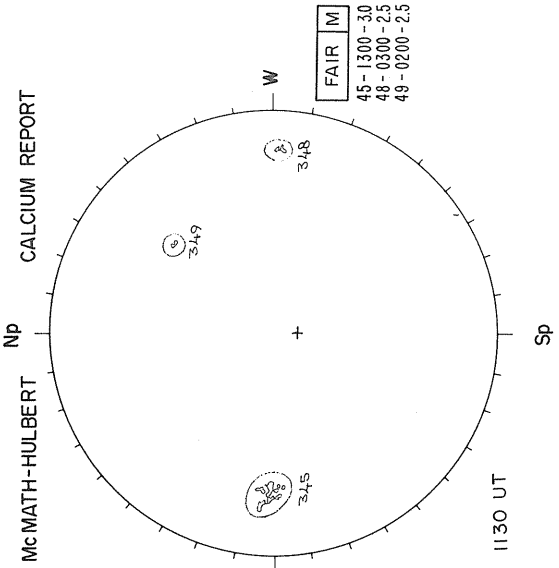
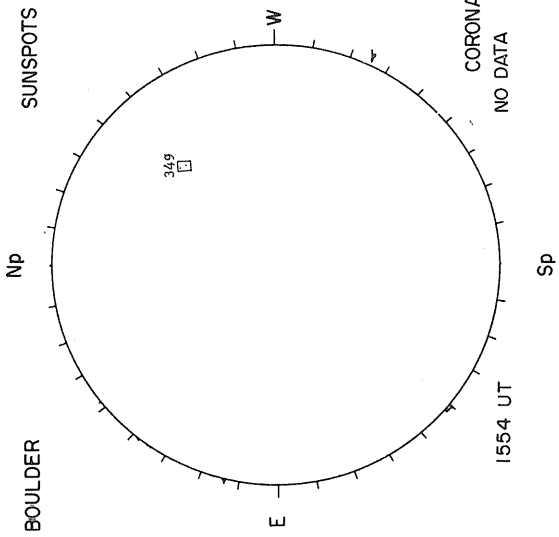
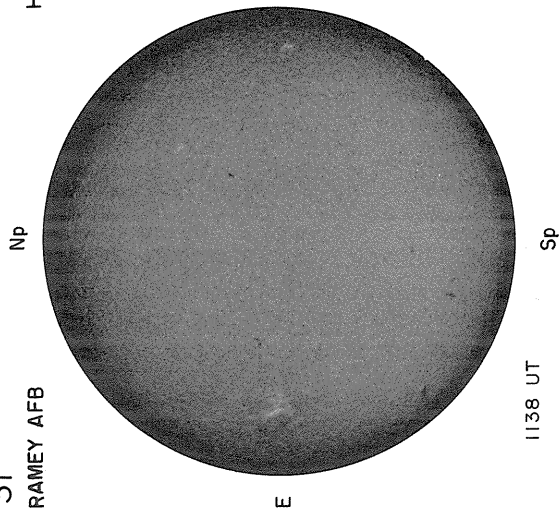
W

E

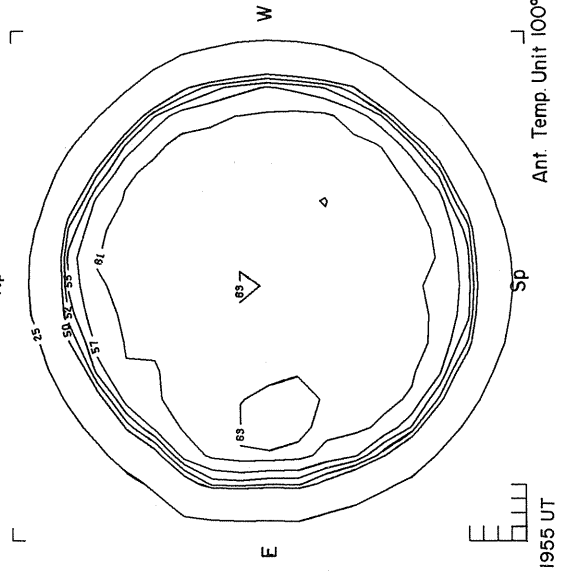
Sp

31

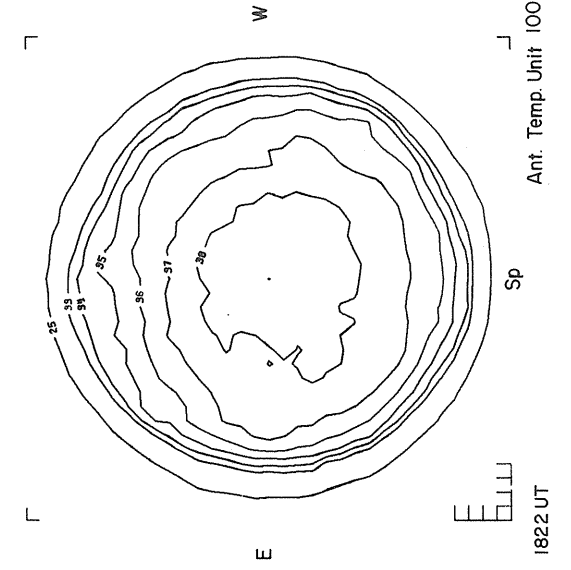
RAMEY AFB



NELC LA POSTA



NELC LA POSTA



REGIONS OF SOLAR ACTIVITY
JULY 1976

MCMATH REGION 14339

CMP DATE 29.7

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
76	7	26	14339	N27 E41	250	200	1.5								
76	7	27	14339	N27 E29	248	200	1.5								

MCMATH REGION 14344

CMP DATE 30.7

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
76	7	28	14344	N33 E28	236	100	1.5								

MCMATH REGION 14342

CMP DATE 31.2

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
76	7	27	14342	S21 E48	228	200	1.0								

Note: Calcium spectroheliograms were obtained at the McMath-Hulbert Observatory on every day in July 1976.
No sunspot observations were made at Mt. Wilson Observatory on July 15, 1976.

DAILY CALCIUM PLAGE INDEX

				JULY 1976							
YR	MO	DAY	INDEX	YR	MO	DAY	INDEX	YR	MO	DAY	INDEX
76	7	1	1.5	76	7	11	0.6	76	7	21	0.6
76	7	2	1.7	76	7	12	1.2	76	7	22	0.5
76	7	3	1.4	76	7	13	1.9	76	7	23	0.3
76	7	4	2.0	76	7	14	1.5	76	7	24	0.2
76	7	5	1.7	76	7	15	2.0	76	7	25	0.3
76	7	6	2.0	76	7	16	2.0	76	7	26	0.3
76	7	7	1.2	76	7	17	1.1	76	7	27	0.7
76	7	8	0.9	76	7	18	1.0	76	7	28	0.4
76	7	9	0.7	76	7	19	0.5	76	7	29	1.2
76	7	10	0.5	76	7	20	0.4	76	7	30	1.9
								76	7	31	3.3

* NO OBSERVATIONS

94
Jul 76

SUDDEN IONOSPHERIC DISTURBANCES

JULY 1976

DAY	UNIVERSAL TIME				WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE							KNOWN FLARE	M _C MATH REGION
	START	END	MAX	IMP		SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD		

THERE WERE NO FLARE ASSOCIATED EVENTS TO REPORT THIS MONTH

PERIODS OF NO OBSERVATIONS:

DATE	TIME (UT) and STATION	DATE	TIME (UT) and STATION
01	0150-0245 UM (10 kHz), 1936-2138 UM (10 kHz), 1955-2015 UM (13 kHz)	13	0000-2400 A29, 1940-2134 UM (10 kHz)
02	0100-0350 UM (10 kHz), 1933-2125 UM (10 kHz)	14	0655-0705 UM (10 kHz), 1938-2105 UM (10 kHz)
03	1935-2115 UM (10 kHz), 1953-2020 UM (13 kHz)	15	0650-1718 UM (10 kHz), 0848-0909 UM (10 kHz), 1931-2114 UM (10 kHz)
04	0651-0742 UM (10 kHz), 1935-2105 UM (10 kHz), 1955-2025 UM (13 kHz), 2300-2400 UM (10 kHz)	16	1935-2100 UM (10 kHz)
05	0000-0135 UM (10 kHz), 1936-2126 UM (10 kHz)	17	0253-0435 UM (10 kHz), 1941-2117 UM (10 kHz)
06	0000-2400 A36, 0650-0725 UM (10 kHz), 2030-2157 UM (10 kHz)	18	1940-2142 UM (10 kHz)
07	0000-2400 A36, 1936-2118 UM (10 kHz)	19	0239-0335 UM (10 kHz)
08-09	0715-1420 A35	21	0000-2400 A33, 1420-1435 MC
08	0704-1120 MC, 1935-2136 UM (10 kHz)	23	1221-1234 MC
09-31	1845-2400 A35	25	0343-0423 UM (10 kHz), 1942-2111 UM (10 kHz), 2245-2400 UM (10 kHz)
09	1935-2116 UM (10 kHz), 2253-2400 UM (10 kHz)	26	1938-2104 UM (10 kHz)
10	0000-0230 UM (10 kHz), 0252-0417 UM (10 kHz), 1117-1906 TM, 1945-2223 UM (10 kHz)	27	1938-2105 UM (10 kHz)
11	1937-2112 UM (10 kHz)	28	1950-2103 UM (10 kHz)
12	0145-0254 UM (10 kHz), 1927-2152 UM (10 kHz)	29	1940-2011 UM (10 kHz)
13-20	0000-2400 A36	30	0025-0110 UM (10 kHz), 1940-2131 UM (10 kHz)
		31	1030-1400 TM, 1947-2105 UM (10 kHz)

STATIONS REPORTING FOR JULY 1976

AAVSO (A1, A19, A21, A29, A30, A31, A33, A34, A35, A36, A37, A40) (SES) (A1, A26, A31, A32) (SEA) (A31) (SWF)
 DEBRE ZEIT (DE) (SPA)
 HIRAI SO (HI) (SWF)
 HOBART (TA) (SEA)
 HUANGAYO (HU) (SWF)
 INUBO (IN) (SPA)
 MCMATH (MC) (SWF, SCNA)

PANSKA VES (PU) (SWF, SEA, SES)
 PRESTON (LO) (SEA)
 SAO PAULO (SES, SPA)
 SOFIA (SF) (SES)
 ST CLOUD (SC) (SES)
 TABLE MOUNTAIN (TM) (SPA, LF-SPA)
 TORINO (TN) (SPA)
 UFICE (UI) (SEA)

Note: Table Mountain discontinued monitoring LORAN-C at Jupiter, Florida on August 28 at 1756 UT.

SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

JULY 1976

JUL 1976	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE	
	START UT	END UT		DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
				START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT		
01	0000	0455	MANI											
	0400	1842	WEIS											
	0430	1818	DURN											
	0525	1015	MANI											
	0914	2428	SGMR											
	1219	2245	HARV											
	2036	2203	CULG											
	2134	2400	MANI											
02	0000	1015	MANI											
	0400	1455	WEIS											
	0431	1818	DURN											
	0915	2420	SGMR											
	1219	2245	HARV											
	2036	2220	CULG											
	2134	2400	MANI											
	03	0000	1016	MANI										
0431		1527	DURN											
0435		0736	CULG											
0843		1842	WEIS											
0915		2420	SGMR											
1219		2245	HARV											
2036		2400	CULG											
2134		2400	MANI											
04	0000	1017	MANI											
	0000	0710	CULG											
	0400	1403	WEIS											
	0628	1818	DURN											
	0916	2419	SGMR											
	1219	2245	HARV											
	1428	1842	WEIS											
	2036	2400	CULG											
2135	2400	MANI												
05	0000	1017	MANI											
	0000	0714	CULG				0259.5							
	0400	1020	WEIS											
	0432	1818	DURN											
	0916	2419	SGMR											
	1031	1842	WEIS											
	1231	2245	HARV											
	2044	2400	CULG											
2135	2400	MANI												
06	0000	1017	MANI											
	0000	0736	CULG											
	0401	0502	WEIS											
	0554	1818	DURN											
	0655	1423	WEIS											
	0918	2418	SGMR											
	1231	2245	HARV											
	1435	1440	WEIS											
	1445	1842	WEIS											
	2036	2400	CULG											
	2135	2400	MANI											
07	0000	0645	MANI											
	0000	0736	CULG											
	0433	1818	DURN											
	0650	0655	MANI											
	0708	1017	MANI											
	0401	1310	WEIS				0842.1	0842.2	2					
	0918	2418	SGMR											
	1232	2245	HARV											
	2036	2400	CULG											
	2135	2400	MANI											
	08	0000	1017	MANI										

Note: Severe wind damage to the University of Colorado (BOUL) antenna has caused suspension of activity from this station as of June 14, 1976.

SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

JULY 1976

JUL 1976	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
	START UT	END UT		DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
				START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
29	2039	2400	CULG										
	2141	2400	MANI										
30	0600	1023	MANI										
	0434	0846	WEIS										
	0445	1835	DURN										
	0000	0724	CULG				0525	0724					IS,W
	0654	1823	WEIS										
	1247	2245	HARV										
	0937	2401	SGMR							1948.0	1948.2	1	III
	2038	2400	CULG				2105	2400					IS,W
	2141	2400	MANI										
			CULG				2335	2336	1				IIIG
			CULG				2354.5	2357.5	1				IIIG
31			CULG				0000	0210					IIIS,W
	0000	0738	CULG				0600	0450	1				IS
	0000	1023	MANI										III
			CULG				0139	0140	1	0139.5	0139.9	2	IIIG,V,U
			CULG				0324	0328	1	0139	0140	1	IIIGG
			CULG				0350.5	0706					IIIN,W
			CULG				0403	0406	1				IIIG
	0446	1843	DURN	0405	0406	1	0446	1843	E 1				I,DC,N
	0435	1511	WEIS	0446	0		0546.0	0843.0	1				IS
			CULG	0546	0718	1	0450	0722	1				IS
			WEIS				0553.9	0554.1	1				IIIB
			CULG				0554		1				IIIB
			WEIS				0559.8	0601.6	2				IIIG
			CULG	0601	0601.5	1	0559.5	0601.5	1				IIIG
			WEIS				0659.4	0700.3	1				IIIG
			WEIS				0756.2	0757.5	2				IIIG
			MANI							0756.4	0756.7	2	III
			WEIS				0821.3	0821.5	2				IIIB
			WEIS				0848.3	0849.6	1				IIIG
			WEIS				0900.7	0901.8	1				IIIG
			WEIS				0903.7	0904.4	1				IIIG
			WEIS				0908.7	0908.8	1				IIIB
	1247	2351	HARV				1254	2200	1				IN
			WEIS				1453.7	1454.1	1				IIIG
	0938	2400	SGMR							1453.9	1454.9	2	V
			SGMR							1850.8	1851.0	1	III
			SGMR							1944.3	1953.0	2	IIIG
	2142	2300	MANI				1952	1954	1				IIIGG
			HARV				2200	2351	1				I

The symbols used in connection with the spectral type in describing the important bursts are as follows:

- | | |
|--|-------------------------------|
| B = Single burst | RS = Reverse slope burst |
| G = Small group (< 10) of bursts | DP = Drifting pairs |
| GG = Large group (> 10) of bursts | DC = Drifting Chains |
| C = Underlying continuum (particularly with type I) | H = Herringbone |
| S = Storm in the sense of intermittent but apparently connected activity | W = Weak |
| N = Intermittent activity in this period | P = Pulsations |
| U = U-shaped burst of Type III | CONT = Continuum |
| | UNCLF = Unclassified activity |

100
Jul 76

SELECTED SOLAR EVENTS

JULY 1976

Culgoora

UT Date 1976 JULY	HELIOGRAPH EVENT							Spectral Type	REMARKS	
	Start (UT)	End (UT)	Freq. (MHz)	Positions		Polarization	Intensity (1-3)			
				Central Dist. (R_{\odot})	Position Angle (Deg.)					
31	0139	0142	80	1.0	} 90	0	3	IIIG,V,U		
			43	1.5						
	0139	0407	160	1.0	} 65	l	1	I		
			80	{ 1.1						{ 60
				{ 1.0							{ 90
	0403	0406	160	1.0	} 90	0	2	IIIG		
			80	1.0						
			43	1.3						

Days without Heliograph observations: ... Nil

COSMIC RAY INDICES
(Neutron Monitors)
JULY 1976

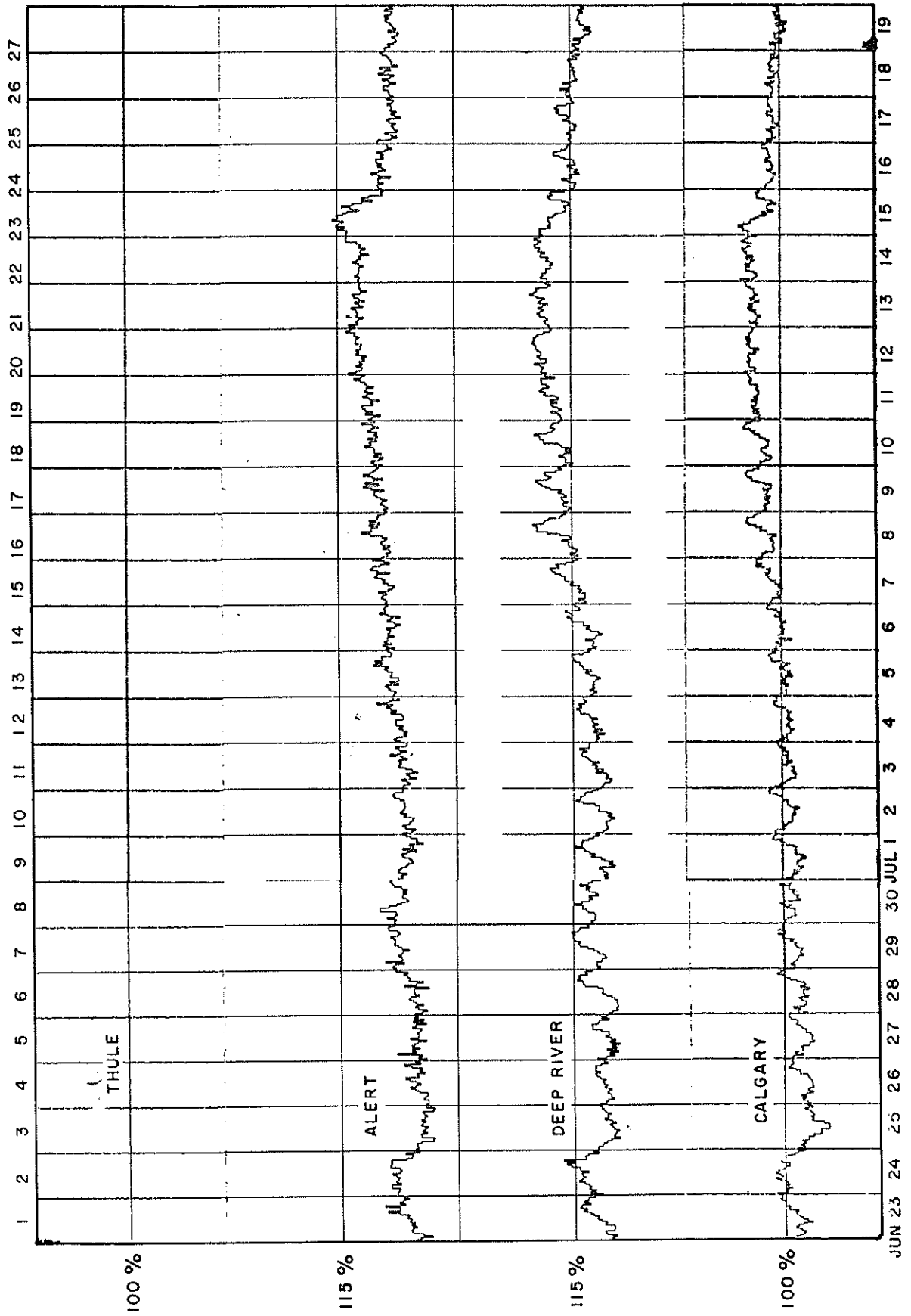
July	THULE*	ALERT	DEEP RIVER	CALGARY	SULPHUR MT	KIEL	CLIMAX	TOKYO
	Average cts/hr	Average cts/hr	Average cts/hr	Average cts/hr	Average cts/hr	Average cts/hr	Average cts/hr	Average cts/hr
1		7488.6	7017.3	11648.3	9010.2	6312.8	4233.3	3536.0
2		7496.4	7011.9	11690.4	9024.5	6316.0	4233.5	3534.9
3		7495.5	7017.5	11680.0	9030.3	6333.7	4227.0	3528.5
4		7516.3	7030.2	11689.6	9024.3	6344.6	4219.1(30)	3531.4
5		7537.5	7037.4	11708.0	9040.1	6342.8	4229.1(24)	3528.3
6		7535.9	7044.7	11724.0	9057.2	6359.5	4242.8(40)	-- (0)
7		7553.1	7079.2	11773.4	9105.5	6386.0	4261.5	-- (0)
8		7561.6	7107.8	11817.5	9168.9	6409.2	4276.0	-- (0)
9		7567.9	7116.8	11828.7	9133.1	6410.6	4269.2(24)	3670.0(17)
10		7576.2	7115.3	11835.6	9136.7	6410.9	4280.3	3665.7
11		7593.9	7128.3	11867.3	9173.7	6415.0	4293.6	3657.9
12		7621.6	7157.2	11890.7	9202.8	6414.3	4297.9	3660.3
13		7621.8	7151.4	11873.5	9190.8	6415.7	4293.7	3662.8
14		7620.6	7148.1	11900.0	9207.5	6421.3	4308.2	3667.2
15		7636.0	7120.0	11845.8	9177.8	6404.4	4278.1	3661.8
16		7552.7	7079.2	11774.7	9079.2	6376.7	4265.2	3664.1
17		7524.5	7081.8	11761.6	9082.1	6355.8	4257.7	3662.1
18		7532.8	7072.5	11752.3	9087.2	6337.8	4242.1	3654.8
19		7525.0	7046.9	11718.0	9066.5	6337.9	4236.2	3653.5
20		7531.9	7042.8	11737.1	9082.8	6341.3	4231.7	3663.4
21		7557.0	7064.4	11771.2	9100.4	6359.0	4240.2	3663.5
22		7536.0	7062.1	11758.5	9072.2	6346.0	4232.5	3660.2
23		7531.1	7052.6	11743.8	9050.6	6339.0	4224.7	3669.7
24		7521.7	7065.3	11746.4	9075.3	6341.3	4227.2	3669.8
25		7517.1	7072.8	11744.3	9056.8	6346.5	4239.0	3675.8
26		7519.3	7063.8	11763.7	9082.9	6360.3	4239.3	3668.0
27		7505.3	7069.9	11694.7	9078.9	6353.4	4239.2	3673.4
28		7523.8	7085.7	11762.0	9095.3	6386.4	4264.0	3676.9
29		7511.1	7090.5	11718.5(23)	9110.1	6386.0	4263.7	3673.4
30		7531.2	7082.0	11688.6	9101.2	6399.2	4257.9	3658.5(20)
31		7556.4	7098.7	11715.4	9107.1	6408.5	4263.9	3671.4
MEAN		7545.1	7077.9	11762.1	9097.2	6370.1	4254.4	3641.5

() Number of hours for which data are available if less than 24. Number of Section Hours at Climax if sum of both sections is less than 40 hours.

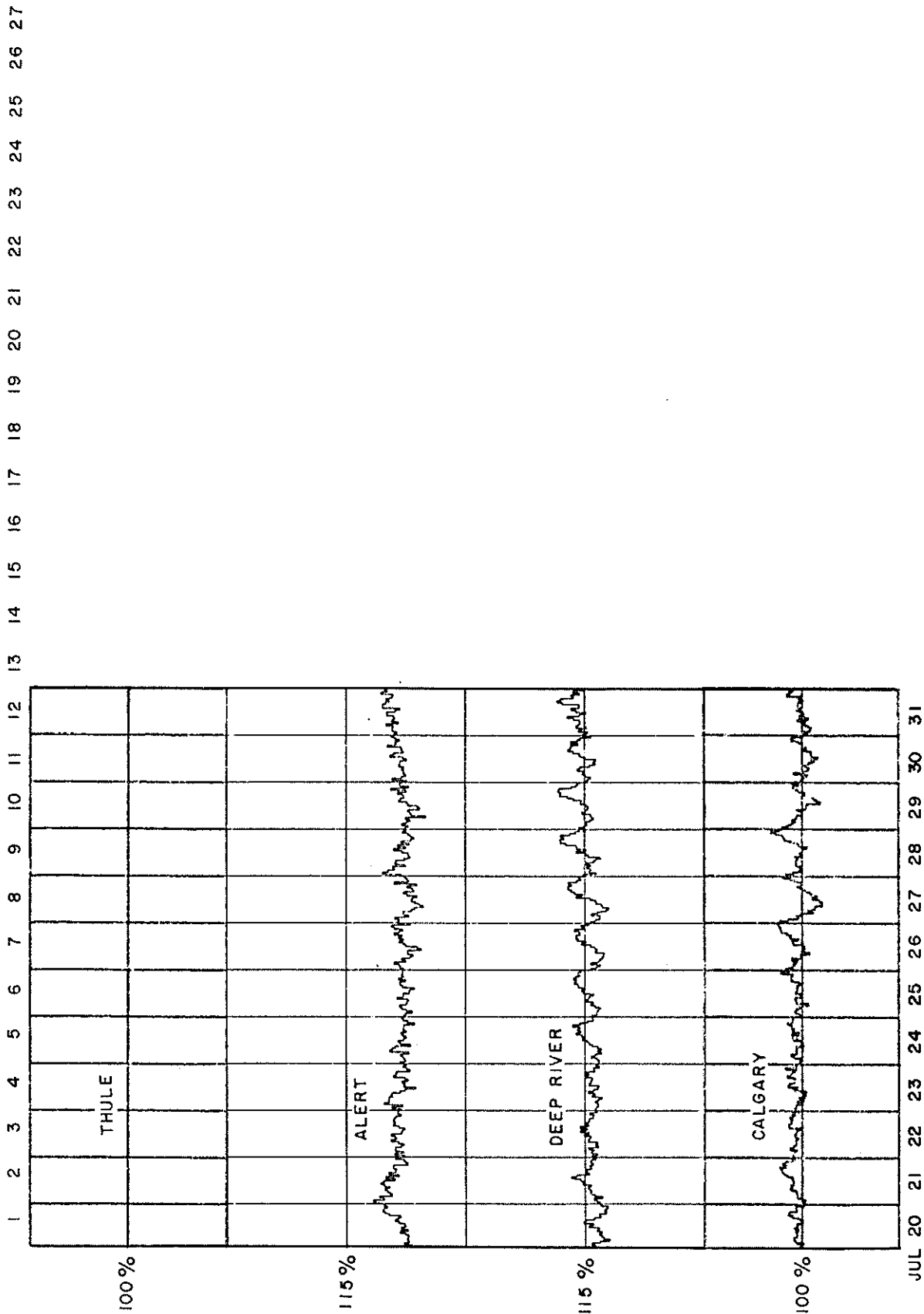
Thule, Alert, Calgary, Sulphur Mountain, Kiel and Climax Scaling Factors = 100.
Deep River Scaling Factor = 300.
Tokyo Scaling Factor = 128.

* Due to the closing of the Geopole Station the Thule neutron monitor operations were temporarily suspended at the end of May 1976. It is expected that observations will be resumed in the not too distant future.

COSMIC RAY INDICES
(Neutron Monitors)
Bartel's Rotation 1954 (June - July 1976)

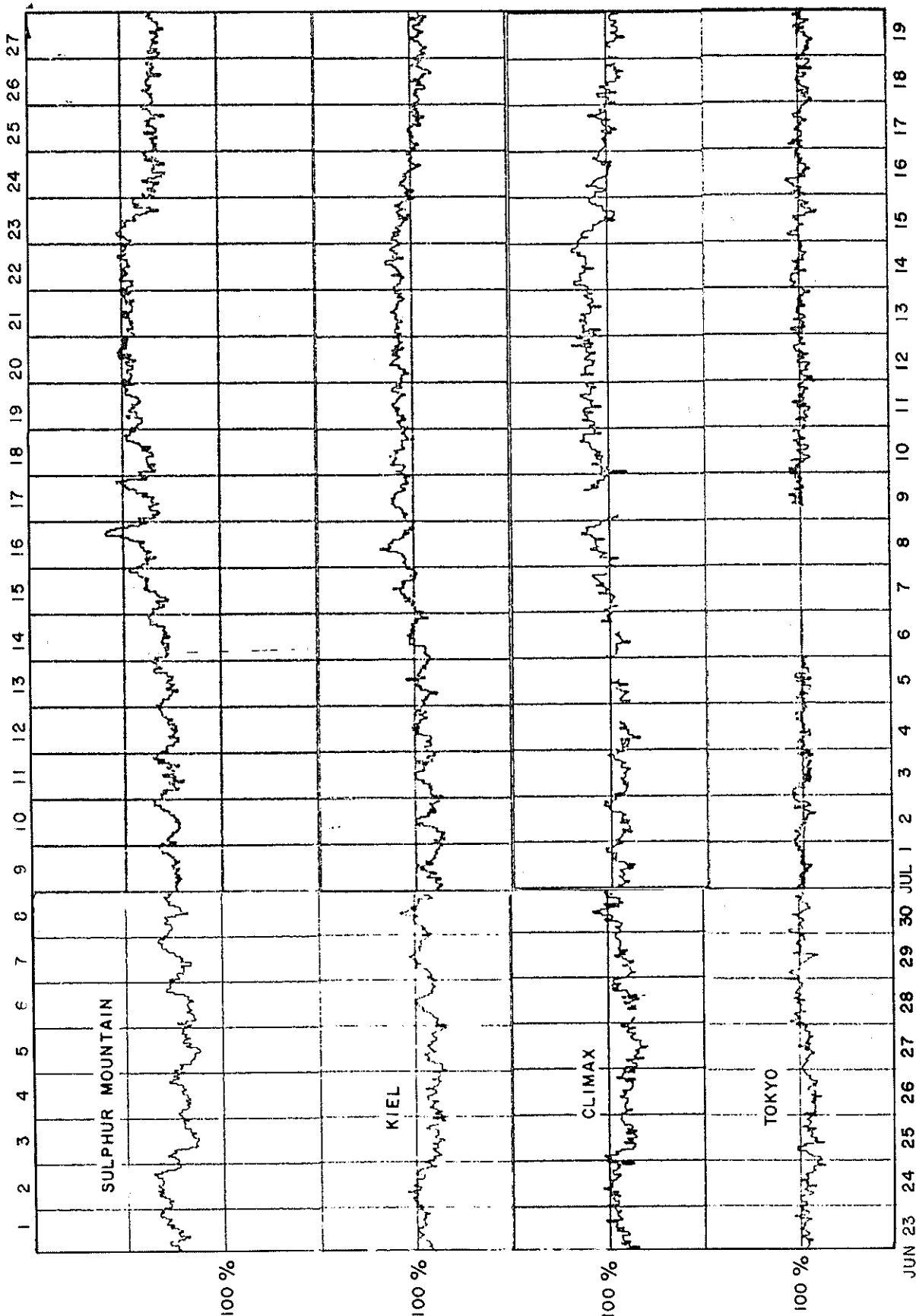


COSMIC RAY INDICES
(Neutron Monitors)
Bartel's Rotation 1955 (July 1976)



COSMIC RAY INDICES (Neutron Monitors)

Bartel's Rotation 1954 (June - July 1976)

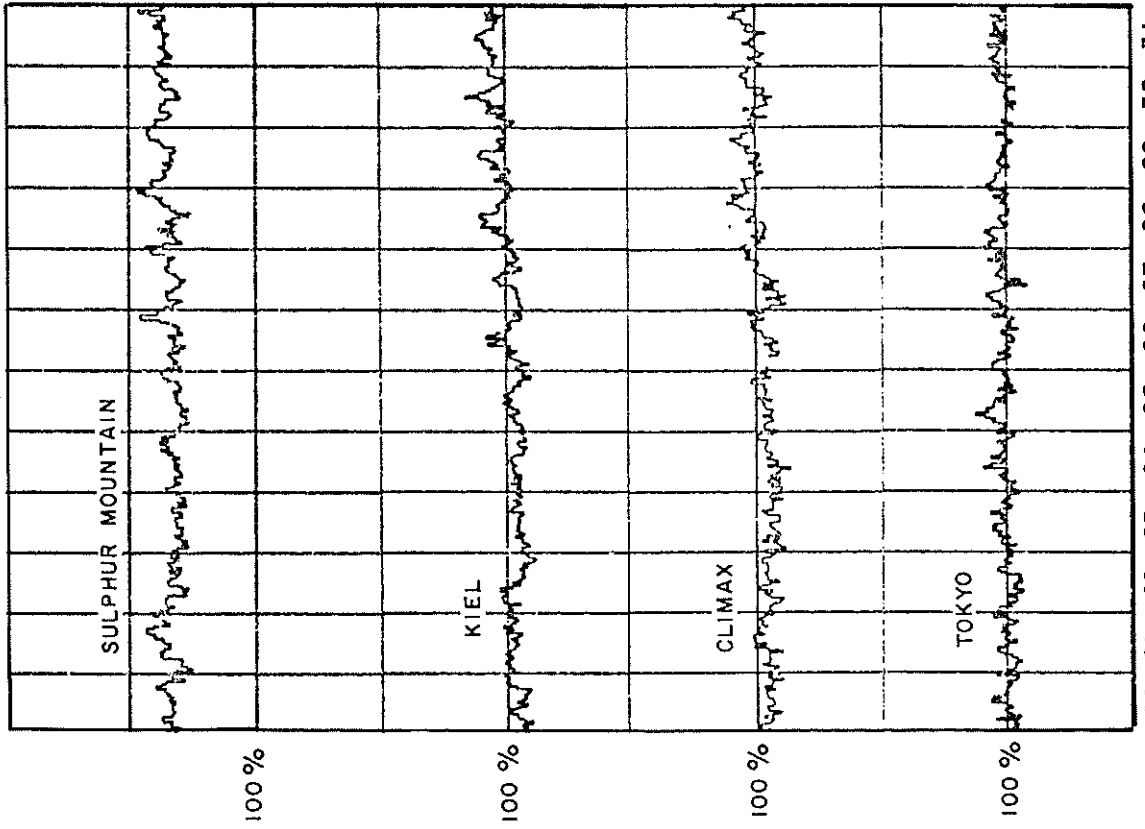


JUN 23 24 25 26 27 28 29 30 JUL 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

COSMIC RAY INDICES (Neutron Monitors)

Bartel's Rotation 1955 (July 1976)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27



JUL 20 21 22 23 24 25 26 27 28 29 30 31

GEOMAGNETIC ACTIVITY INDICES

JULY 1976

Day	Three-Hourly Indices Kp									Three-Hourly Indices Km									Ap	aa				Cp	
		1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8		N	S	M			
1	D	3+	5-	3+	4	3-	3-	2	2	25-	3+	4+	3	4-	3	3-	2	2-	18	30	38	47	22	1.0	
2		3	2-	2+	2+	3-	2+	2-	2-	18-	3	2	3	2+	3-	2+	2-	2-	9	21	20	21	21	0.5	
3		1	3	3-	3+	2+	3+	2-	3	20+	1	3	3-	4-	2+	3	2	3	12	25	30	31	24	0.7	
4		2	2	4-	3+	3	3+	4-	1+	22+	2	2	4	3	3-	3-	3	2-	14	26	36	31	31	0.8	
5		1	1+	2-	2-	2	2	1+	1+	12+	1+	2-	2-	2-	2+	2+	1+	1+	6	17	13	12	18	0.3	
6		3	1+	2	1+	1+	1	1	1	12	3	1+	2-	1	2-	2-	1+	1	6	14	10	15	10	C	0.3
7		3	3-	1+	3	2-	2-	1-	2+	16+	3-	2+	2	2+	2-	2+	1+	3-	9	22	11	18	15		0.5
8		2-	3-	2+	2-	4-	3-	4	3-	21+	1+	3-	2+	2	3	3-	3+	2+	13	28	21	19	31		0.8
9		3+	4-	2-	2+	2	2+	2-	2-	19-	3	3	2	3-	2-	2	2-	2-	10	24	14	23	16		0.6
10		1+	2+	2	2	1	1	1+	1+	12+	1+	3-	2+	2+	1+	1-	1+	1	6	16	9	15	10	CC	0.3
11	QQ	1	1	1	1	1-	1	1+	1+	8+	1+	1	1	1	1	1+	2-	1+	4	11	5	7	10	CC	0.1
12	Q	2	2-	1	1-	1+	1	1+	2	11	2	1+	1+	1	1	1	1+	2	5	14	8	10	12	CC	0.2
13	QQ	1+	1+	2-	1-	1	1-	1-	1+	9-	1+	2-	1+	1+	1+	1	1-	1	4	11	6	9	8	CC	0.1
14		1+	2	2+	2	2	1+	1+	1-	13-	1+	2-	2+	2+	2	1+	1-	1-	6	17	7	13	12	CC	0.3
15	O	2-	2-	2	2	2-	4+	6-	4-	23-	2-	2-	2	2+	2	4-	4	3	19	36	16	12	41		1.0
16	D	3	3	4+	3-	3	3	3+	2+	25-	3	3	4	2+	3	2+	3+	2+	16	33	30	34	30		0.9
17	Q	1+	2-	1	1	1	1+	2-	2-	11-	1+	2	1	1+	2-	1+	1+	2-	5	15	10	11	14	C	0.2
18		1+	2	2	0+	1-	1	2+	2	12-	1+	2	2-	1-	1	1+	2-	2-	6	13	7	10	11	CC	0.2
19		3-	1	2	1	1+	2-	1	0+	11	3-	1	2-	1	1	2+	1+	1-	6	15	9	14	10	CC	0.2
20	QQ	1+	1+	1+	1	1	1-	1-	1-	8	1	1+	1+	1+	1	1	1	1	4	12	4	9	7	CC	0.1
21	QQ	1+	1-	0	1+	2-	1	0	0	6	1	1-	0+	1+	1+	1+	0	0+	3	9	5	7	7	CC	0.1
22	Q	2-	1	2	2-	1+	0+	0+	1-	9	1+	1	2+	2	1+	1-	0+	1-	4	12	8	13	7	CC	0.2
23	Q	2-	2-	1	1	2	1+	1	0+	10	2-	2-	1	1	2	2-	1	1-	5	14	8	9	13	CC	0.2
24	Q	0+	0+	0	1-	1+	1+	2+	2	8+	0+	1-	0+	1-	1	1+	1+	2+	4	12	7	6	14	C	0.1
25		4-	2+	2	2-	3-	2-	1	2+	17+	3+	2+	2	2-	2+	2-	1	2+	9	24	15	23	16		0.5
26	QQ	3-	1-	0	0	1-	0+	1	2-	7	2+	1-	0	0+	0+	1-	1	2	4	11	6	8	8	CK	0.1
27		1-	1+	1-	3-	2-	1+	3	3	14+	1+	2	1+	3-	2	1+	3-	3-	8	17	20	16	21		0.4
28		3+	3-	4-	3	3+	3	4-	2+	25	3+	3-	4-	3	3	3-	3+	2+	16	38	28	31	36		0.9
29	O	4	4-	3	4-	3-	3-	3-	3+	26-	4-	3+	3	3+	3	3-	2+	3	18	32	25	32	26		1.0
30	O	3-	4-	4-	4	4+	2+	3-	3	26+	2+	4-	3+	4-	4	2	2+	3-	19	37	28	36	29		1.0
31		2-	1+	2+	2	2+	2	2-	2	15+	2	2-	3-	3-	2	2	1+	2-	7	18	14	17	16		0.4
																			9	20.2	15.1	17.7			0.45

Day	Three-Hourly Indices Kn									Three-Hourly Indices Ks								
	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	
1	3	5-	3	4	3	3-	2	2-		4-	4+	3	4-	3-	3-	2+	2-	
2	3-	1+	3	2+	3-	2+	2-	2-		3+	2+	3	2+	3	2+	2-	2-	
3	1	3	3-	4-	2+	3	2	3-		1-	3-	3-	4	2+	3	2	3	
4	2+	2	4-	3	2+	3-	3	2-		2	2-	4	3+	3-	3	3	1+	
5	1+	2-	2-	2-	3-	2	2-	2-		1	2	2-	1+	2-	2+	1+	1+	
6	3-	1+	2-	1	2-	2-	1	1+		3+	1+	2-	1+	2	2-	2-	1	
7	3-	2	2	3-	2-	2+	1+	2+		3	2+	2-	2	2-	2+	1+	3	
8	1+	3-	2+	2	3	3-	3+	2+		2-	3-	3-	2+	3	2+	3+	3-	
9	3+	3	2+	3-	2	2+	2	2		3-	3+	2	3-	2-	2-	2-	1+	
10	1+	3	2+	3-	1	1	2-	1		1+	2+	2+	2-	1+	1-	1	1+	
11	1+	1	1	1+	1+	1	2-	1+		1+	1	1	1	0+	1+	2-	1	
12	2	2-	1+	1	1+	1	2-	2		2	1+	1	1-	1-	1	1	2-	
13	1+	2-	2-	1+	1+	1	1	1+		1	1+	1	1+	1	1-	1-	0+	
14	1+	2-	2+	2-	2	1+	1	1		1+	2-	2+	2-	2-	1+	0+	0+	
15	2-	1+	2	2+	2+	4+	4+	3+		2-	2-	2-	2	2-	3-	4-	3	
16	3	3	4-	2+	3	3-	3	2+		3-	3	4	2	3-	2	4-	3-	
17	1+	2	1	2-	2-	1+	1+	2-		1+	2-	1	1+	2-	1-	1	2	
18	1+	2+	2	1	1+	1+	2	2		1+	2-	2-	1-	1-	1	1+	2-	
19	2+	1	2-	1	1+	2-	1+	1		3	1+	2-	1	1+	1+	1	0+	
20	1	1+	2-	2-	1+	1	1	1+		1	1+	1+	1	1-	1-	1	1	
21	1+	0+	1-	1+	2-	2	0	0+		1	1-	0	1	1+	1-	0	0	
22	2-	1+	2+	2	1+	1	0+	1		1	1	2+	2	1-	0+	0	1-	
23	2-	2-	1+	1+	2+	2-	1	1-		2-	2-	1-	1-	2-	1+	1-	1-	
24	0+	1-	1-	1-	2-	2-	2+	2		1-	1-	0+	1-	1+	1+	3-	2-	
25	3+	2+	2	2-	2+	2-	1+	2+		3+	3-	2-	2-	2	2-	1	2-	
26	2+	0+	0	0+	0+	0+	1+	2		2+	1	0	0	0+	1-	1-	2-	
27	2-	2	2-	3-	2	1+	3	3-		1+	2-	1+	3-	2	1+	3-	3	
28	3+	3-	4	3	3+	3-	3+	3-		3+	2+	4-	3	3	3-	3+	2+	
29	4-	3+	3	3+	3-	3-	3-	3		4-	3+	3	3+	3+	3-	2+	3	
30	3-	4-	3+	4-	4+	2	2+	3-		2+	4-	3	4-	4-	2-	2	3-	
31	2	2-	3	3	2+	2	1+	2		2+	1+	3-	3-	2	2-	1+	2-	

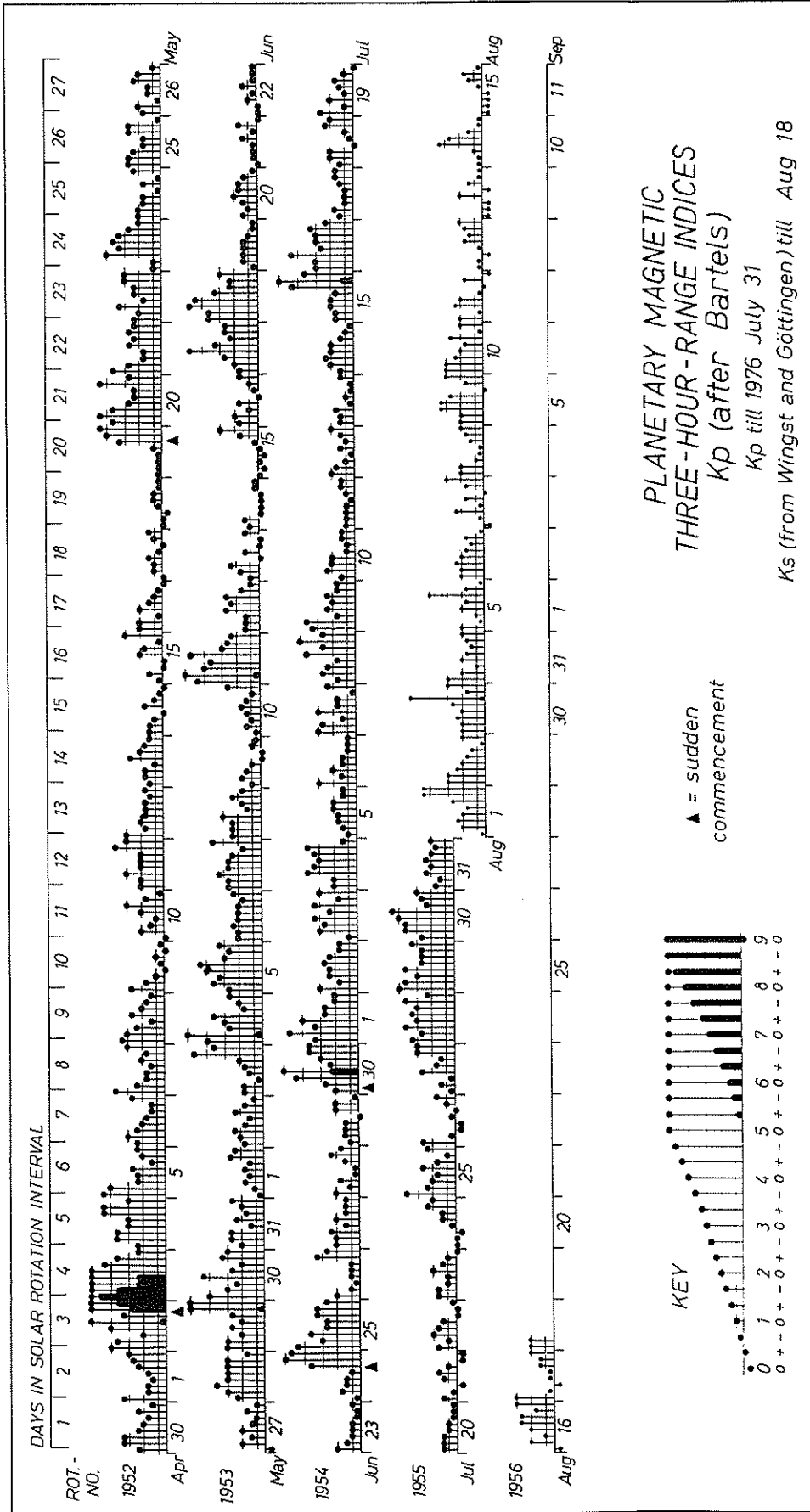
DAILY AVERAGE INDICES AP

1976

1975

DAY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL
1	9	7	6	7	32	4	23	17	107	10	6	18
2	7	6	2	36	27	4	20	32	16	58	6	9
3	5	3	11	65	12	15	16	27	44	94	12	12
4	6	3	9	41	13	10	12	12	30	20	20	14
5	29	4	6	22	8	9	8	15	27	14	20	6
6	7	13	25	11	7	13	8	33	30	8	7	6
7	5	7	38	10	4	11	21	26	27	10	13	9
8	14	6	45	7	18	5	29	42	14	10	8	13
9	15	24	37	37	16	4	24	36	16	4	4	10
10	15	26	24	20	8	47	24	32	12	6	6	6
11	7	26	8	13	5	40	12	27	12	11	26	4
12	4	19	12	9	3	13	17	26	9	7	7	5
13	5	17	7	4	3	9	22	11	13	6	4	4
14	16	13	9	3	6	11	17	14	15	4	3	6
15	18	8	5	4	9	7	8	15	4	5	4	19
16	5	6	10	6	14	10	6	18	8	5	5	16
17	9	13	8	17	9	14	14	20	5	4	14	5
18	6	14	4	7	6	9	22	13	2	3	21	6
19	4	8	3	8	6	8	25	11	5	12	4	6
20	15	7	5	9	3	11	19	8	2	19	5	4
21	17	6	6	18	9	20	14	5	5	11	3	3
22	12	4	6	50	10	23	14	3	19	11	3	4
23	10	4	7	8	7	20	4	5	8	14	4	5
24	6	2	4	13	2	21	3	4	16	6	16	4
25	9	3	4	15	18	10	4	4	9	9	18	9
26	5	14	5	14	34	5	9	138	6	6	7	4
27	6	14	5	5	31	6	26	35	11	5	6	8
28	5	8	9	9	15	5	20	15	10	14	5	16
29	27	5	12	29	15	6	34	15	17	22	5	18
30	14	2	9	36	11	9		12	10	17	29	19
31	6		19		7	29		10		9		7
MEAN	10	10	12	18	12	13	16	22	17	14	10	9

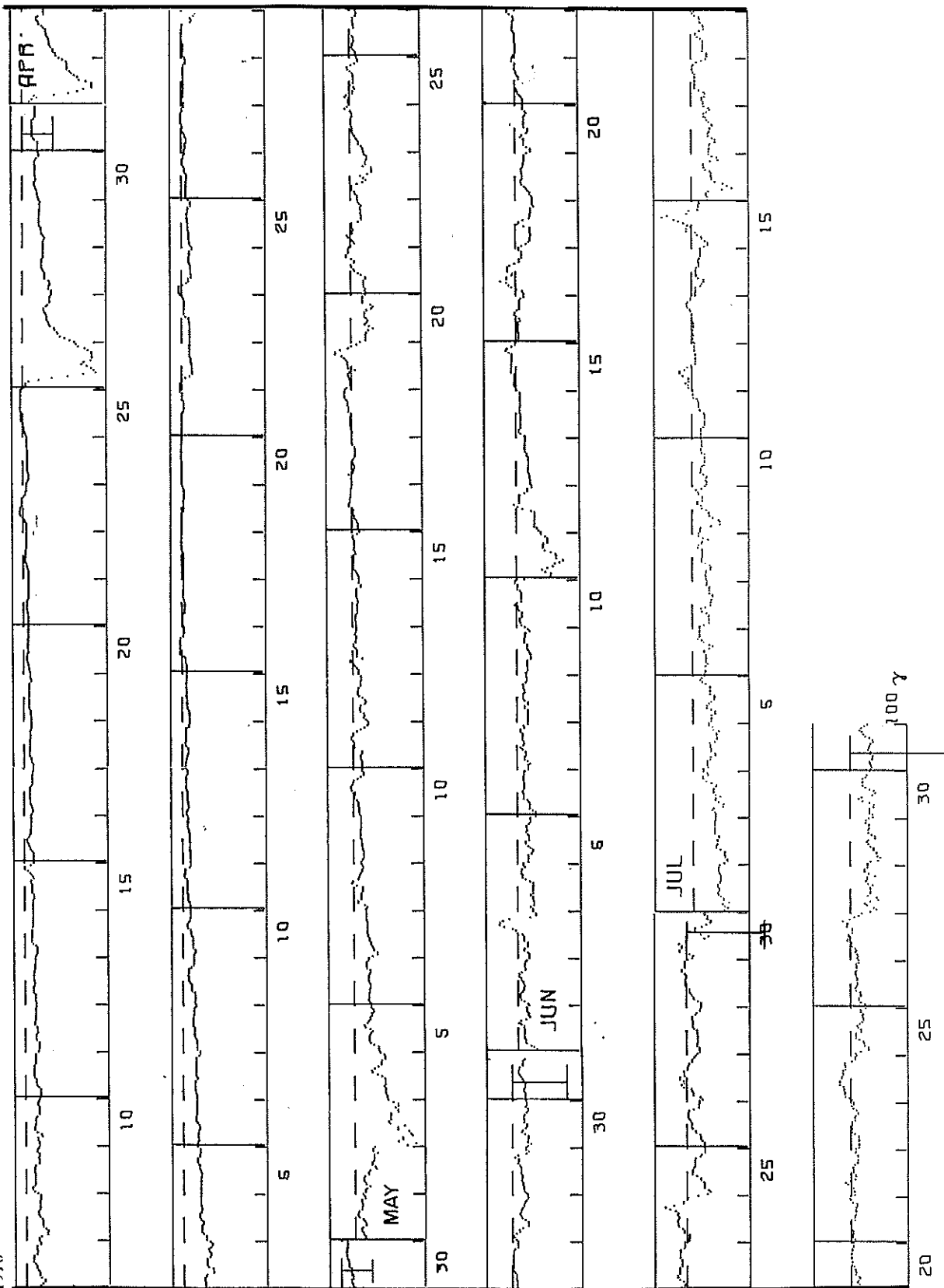
GEOMAGNETIC ACTIVITY INDICES



GEOMAGNETIC ACTIVITY INDICES

Hourly Equatorial Dst

1976



Note the sensitivity indicator for each month on the last day of the month and also note that the zero reference level is different for each month.

HOURLY EQUATORIAL DST VALUES (PROVISIONAL)

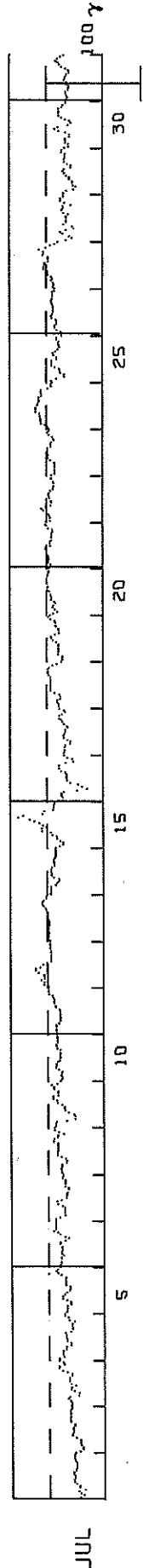
JULY 1976

NASA/GODDARD SPACE FLIGHT CENTER

(Units--Gammmas)

(Time-UT)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-31	-36	-32	-30	-38	-31	-32	-28	-26	-25	-28	-25	-26	-29	-30	-30	-30	-29	-29	-27	-26	-26	-27	-29
2	-33	-36	-36	-33	-32	-34	-33	-28	-24	-26	-27	-25	-28	-29	-28	-23	-22	-23	-24	-23	-22	-23	-25	-24
3	-25	-25	-22	-20	-23	-32	-33	-26	-23	-25	-29	-23	-21	-22	-22	-25	-25	-19	-14	-11	-11	-17	-15	-11
4	-12	-17	-15	-15	-15	-15	-20	-24	-23	-19	-19	-18	-19	-17	-24	-26	-25	-24	-26	-28	-21	-20	-17	-18
5	-20	-21	-21	-20	-24	-23	-19	-15	-16	-18	-20	-23	-24	-22	-18	-18	-18	-18	-18	-13	-10	-8	-11	-13
6	-13	-15	-15	-14	-15	-17	-14	-14	-16	-14	-15	-12	-14	-19	-22	-18	-12	-10	-6	-9	-8	-8	-9	-8
7	-9	-13	-19	-17	-17	-18	-19	-15	-10	-9	-15	-20	-21	-21	-22	-23	-22	-18	-18	-18	-15	-17	-16	-16
8	-14	-14	-13	-16	-16	-20	-21	-18	-14	-10	-11	-12	-11	-12	-10	-10	-6	-8	-11	-12	-18	-11	-7	-8
9	-10	-8	-11	-21	-30	-28	-27	-21	-18	-17	-19	-15	-10	-9	-6	-7	-12	-12	-12	-7	-6	-4	-11	-14
10	-16	-17	-14	-16	-17	-12	-9	-11	-9	-12	-14	-15	-13	-14	-14	-13	-10	-9	-10	-12	-10	-10	-10	-9
11	-11	-10	-9	-9	-9	-13	-15	-15	-14	-14	-14	-13	-12	-9	-8	-7	-8	-9	-6	-5	-2	-1	-2	-2
12	-1	3	3	6	2	2	3	9	12	11	6	3	-1	-5	-5	-5	-4	-5	5	-3	-3	-3	-3	-5
13	-2	-1	-1	-4	-1	-3	-3	-4	-4	-3	-1	0	0	-1	0	1	2	4	5	4	2	0	-1	-5
14	-5	-6	-6	-6	-10	-12	-14	-14	-7	-5	-6	-4	-4	-7	-9	-8	-7	-8	-10	-11	-10	-10	-9	-10
15	-14	-18	-18	-14	-11	-10	-6	-4	5	4	0	4	8	13	18	30	23	3	1	-8	-9	-7	-10	-8
16	-18	-18	-15	-16	-19	-33	-43	-36	-32	-24	-21	-20	-20	-22	-19	-15	-13	-12	-14	-21	-29	-26	-21	-18
17	-18	-20	-20	-20	-21	-26	-26	-22	-18	-17	-20	-21	-20	-23	-21	-18	-16	-15	-13	-13	-17	-20	-18	-13
18	-12	-13	-11	-12	-15	-16	-13	-8	-4	-4	-5	-4	-4	-5	-4	-5	-2	-1	-2	-1	-4	-7	-12	-16
19	-18	-18	-16	-12	-14	-12	-13	-14	-12	-10	-7	-5	-5	-10	-14	-13	-12	-10	-9	-9	-8	-4	-2	-5
20	-8	-12	-9	-7	-9	-11	-8	-5	-7	-4	-4	-3	-1	-3	-2	0	0	0	-1	-3	-3	-4	-3	-3
21	-6	-4	-2	-2	-4	-3	-1	0	0	1	-1	-5	-4	-5	-7	-6	-6	-6	-8	-6	-2	0	1	-1
22	-5	-3	-2	-2	0	3	5	-1	-6	-7	-5	-3	-4	-2	-4	-6	-8	-9	-9	-9	-7	-5	-6	-7
23	-10	-9	-9	-9	-9	-9	-8	-4	-2	-3	-2	-1	-1	-2	-6	-4	-7	-9	-9	-6	-3	-1	-4	-3
24	-1	1	5	6	6	7	5	8	11	11	10	8	7	6	8	6	4	5	6	4	3	-6	-5	-8
25	-5	-12	-20	-19	-15	-14	-13	-9	-6	-6	-6	-12	-11	-8	-7	-11	-13	-15	-13	-12	-15	-11	-11	-17
26	-18	-15	-11	-9	-10	-12	-12	-10	-6	-5	-8	-9	-7	-8	-8	-6	-5	-6	-8	-8	-7	-6	-10	-10
27	-7	-10	-7	-5	-8	-5	-2	-1	-2	3	1	0	1	-3	-2	-2	4	1	3	8	-1	-5	-10	-13
28	-22	-28	-24	-17	-15	-22	-30	-27	-18	-22	-22	-22	-22	-24	-18	-16	-19	-19	-27	-19	-15	-16	-19	-19
29	-19	-22	-30	-32	-28	-27	-27	-24	-25	-21	-19	-17	-20	-27	-22	-22	-19	-19	-21	-21	-20	-16	-18	-20
30	-24	-23	-20	-21	-21	-25	-26	-20	-13	-9	-13	-24	-27	-24	-20	-16	-13	-14	-14	-14	-17	-19	-21	-22
31	-23	-24	-21	-20	-21	-24	-25	-25	-21	-22	-19	-21	-22	-23	-25	-23	-20	-16	-14	-12	-10	-13	-16	-19



PRINCIPAL MAGNETIC STORMS

JULY 1976

OBS. 2 letter IAGA code	GEOMAG- NETIC LATI- TUDE	COMMENCEMENT			SC - AMPLITUDES			MAXIMUM 3 HOUR - INDEX K		RANGES			UT END	
		DAY	hr min (UT)	TYPE	D(')	H(γ)	Z(γ)	K	DAY (3 HOUR PERIOD)			DAY	HOUR	
									D(')	H(γ)	Z(γ)			
IR	41.0N	30	0400	..	..	..	..	7	30(4)	20	163	60	02	21
NE	55.1N	3	0357	SC	0.5	9	..	6	04(3)	28	76	90	05	06
HD	07.6N	3	0400	..	..	..	..	4	04(4)	3	78	30	04	21
HD	07.6N	8	1200	..	..	..	..	4	08(5)	6	55	36	09	23
NE	55.1N	15	15--	..	..	..	..	5	16(3)	21	80	115	17	08
WI	54.2N	15	15--	..	..	..	..	5	15(6,7)	25	130	40	16	21
BD	48.9N	15	02--	..	..	..	..	5	16(3)	19	69	37	17	00
IR	41.0N	15	0600	..	..	..	..	5	15(6)	17	119	28	16	23
HD	07.6N	15	0750	..	..	..	..	5	15(6)	5	88	32	16	22
HU	00.6S	15	1200	..	..	..	..	6	15(6)	5	181	36	16	20
PM	18.6S	15	07--	..	..	..	..	5	16(3)	3	100	50	16	15
KG	56.5S	15	15--	..	..	..	..	4	15(7) 16(7)	--	--	--	17	21
NE	55.1N	27	0424	..	..	..	..	6	28(3)	37	120	122	31	12
BD	48.9N	27	20--	..	..	..	..	5	30(2)	23	94	56	30	24
IR	41.0N	27	1800	..	..	..	..	6	30(5)	15	118	34	30	16
JP	17.3N	27	18--	..	..	..	..	-	--	8	66	45	30	23
SH	14.6N	27	18--	..	..	..	..	-	--	7	82	39	30	23
UJ	13.5N	27	18--	..	..	..	..	-	--	7	78	42	30	23
AL	09.5N	27	18--	..	..	..	..	5	30(4)	7	74	50	30	23
HD	07.6N	27	0900	..	..	..	..	5	30(4)	6	93	32	30	21
AN	01.5N	27	18--	..	..	..	..	-	--	5	118	55	30	23
TV	01.1S	27	18--	..	..	..	..	-	--	5	132	94	30	23
CO	64.6N	28	04--	..	..	..	..	6	29(3,4)	83	1100	410	29	19
GU	04.0N	28	1316	..	..	..	..	5	29(1)	0	70	10	29	19

Reports were received from the following observatories:

College	Witteveen	Tucson	Alibag	Annamalaingar	Trivandrum	Gnangara
Sitka	Fredericksburg	Irkutsk	Hyderabad	Huancayo	Port Moresby	Toolangi
Newport	Boulder	Honolulu	Guam		Hermanus	Port-aux-Francais

112
Jul 76

SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

JULY 1976

PRELIMINARY REPORT ON RAPID MAGNETIC VARIATIONS (by Dr. A. Romana)

The meaning of the station symbols is given in the IAGA-Bulletins nr. 32. Times of ssc are mean values.

Sudden commencements followed by a magnetic storm or a period of storminess (ssc)
n o n e

Solar-flare effects (sfe)

Effects confirmed by ionospheric or solar observations are underlined.

12 0242 - 0308 SS
14 0554 - 0610 MT
29 1630 - 1643 BU

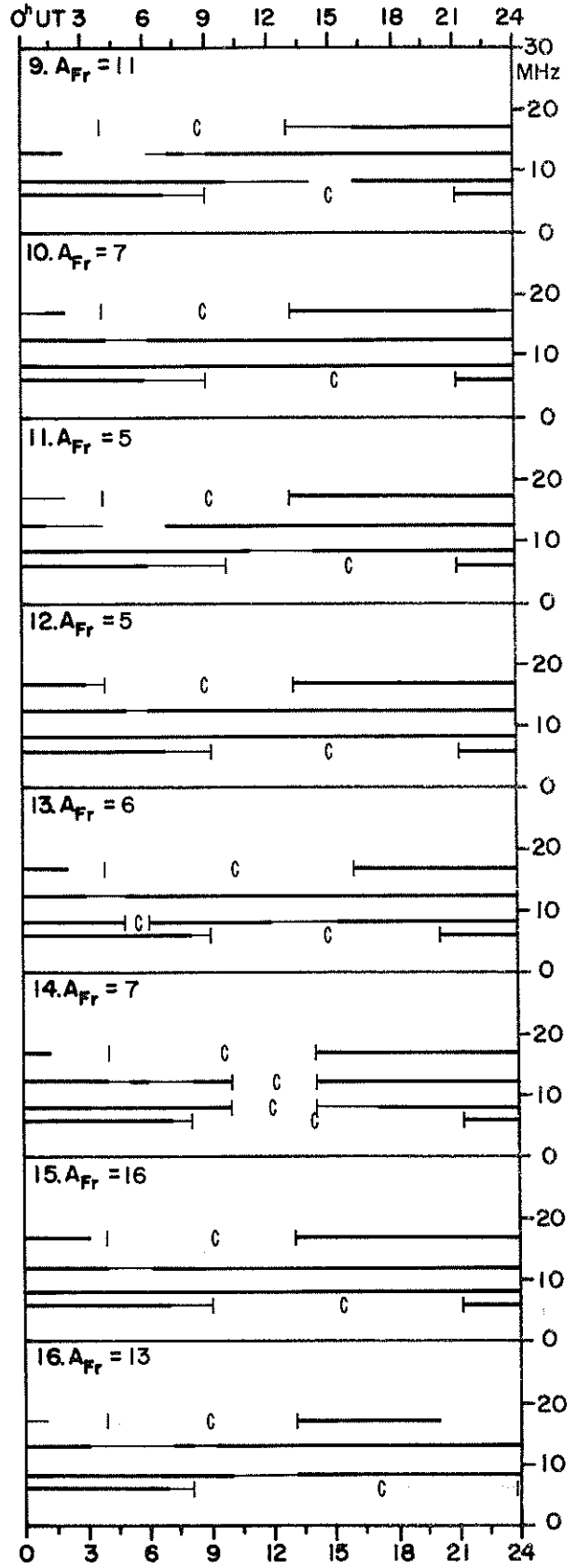
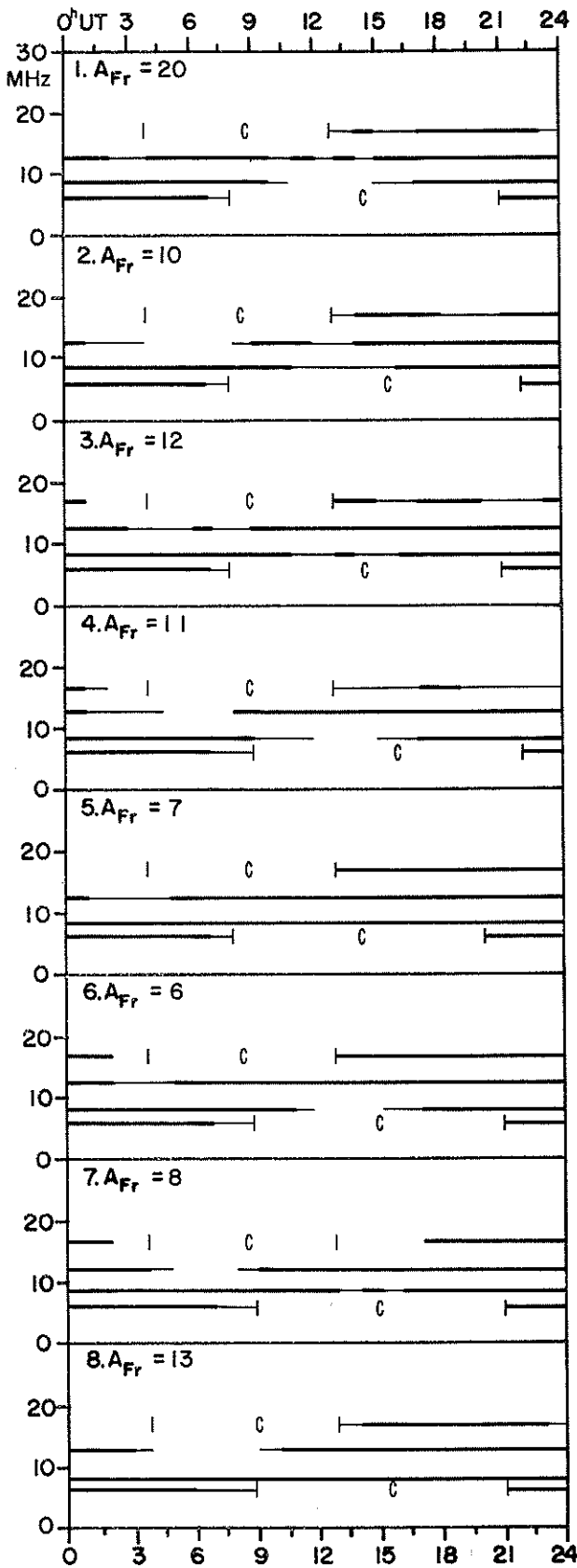
RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

JULY 1976

North Atlantic

JUL 1976	WHOLE DAY INDICES NORTH ATLANTIC	ADVANCE FORECASTS (JC- REPORTS) FOR WHOLE DAY	NORTH ATLANTIC								GEOMAGNETIC INDICES		
			6-HOURLY QUALITY FIGURES				SHORT-TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF				K _{FR}		A _{FR}
			00 TO 06	06 TO 12	12 TO 18	18 TO 24	02	08	14	20	HALF DAY (1) (2)		OBSERVED
01	5+	5	4+	5-	6+	6+	4	4	4	5	(4)	3	20
02	60	5	60	6+	6-	6+	5	5	6	5	3	2	10
03	60	5	6-	7-	6-	60	5	5	6	6	3	3	12
04	60	6	60	60	60	6+	5	5	6	6	3	2	11
05	60	6	60	6-	60	7-	6	6	6	6	2	2	7
06	6-	6	5+	6-	6-	6-	6	6	6	6	2	1	6
07	60	6	6-	6-	6+	60	6	6	6	6	3	1	R
08	6-	5	5+	6-	60	60	5	5	6	5	2	3	13
09	6-	5	6-	5+	6-	60	5	5	5	6	3	2	11
10	60	5	7-	60	6-	60	6	6	6	6	2	1	7
11	6-	6	6-	5+	60	6-	6	6	6	6	2	1	5
12	6-	6	6-	4+	7-	6+	6	6	6	6	2	2	5
13	6-	6	6-	50	6+	6-	6	5	6	6	2	2	6
14	6-	6	6-	5-	60	6-	6	6	6	6	2	2	7
15	60	6	6+	6-	60	60	6	6	6	6	2	(4)	16
16	6-	6	60	50	60	6-	5	5	5	6	3	2	13
17	6-	6	6-	6-	6-	6-	5	5	6	6	2	2	5
18	6-	6	6-	6-	6-	6-	6	6	6	6	2	2	6
19	60	7	60	7-	60	6-	6	6	6	6	2	1	7
20	60	7	60	60	6+	6-	6	6	6	6	2	1	5
21	60	6	6-	7-	6-	60	6	6	6	6	1	1	2
22	60	6	60	6-	6-	60	6	6	6	7	2	1	6
23	60	6	60	60	60	60	6	6	6	7	2	1	4
24	60	6	60	60	60	6+	6	6	6	6	1	2	5
25	6+	6	6-	6+	7-	7-	6	6	6	6	3	2	8
26	6+	6	7-	60	7-	6+	5	6	6	6	1	1	5
27	6-	5	6+	5-	6-	60	6	6	6	6	2	3	9
28	6-	5	6-	5+	6-	60	5	5	6	5	(4)	3	21
29	6-	5	50	5+	60	6-	5	5	5	5	(4)	3	16
30	6-	5	5+	6-	5+	6-	5	4	4	5	(4)	3	17
31	6-	6	5+	5+	60	5+	5	5	5	5	3	2	9

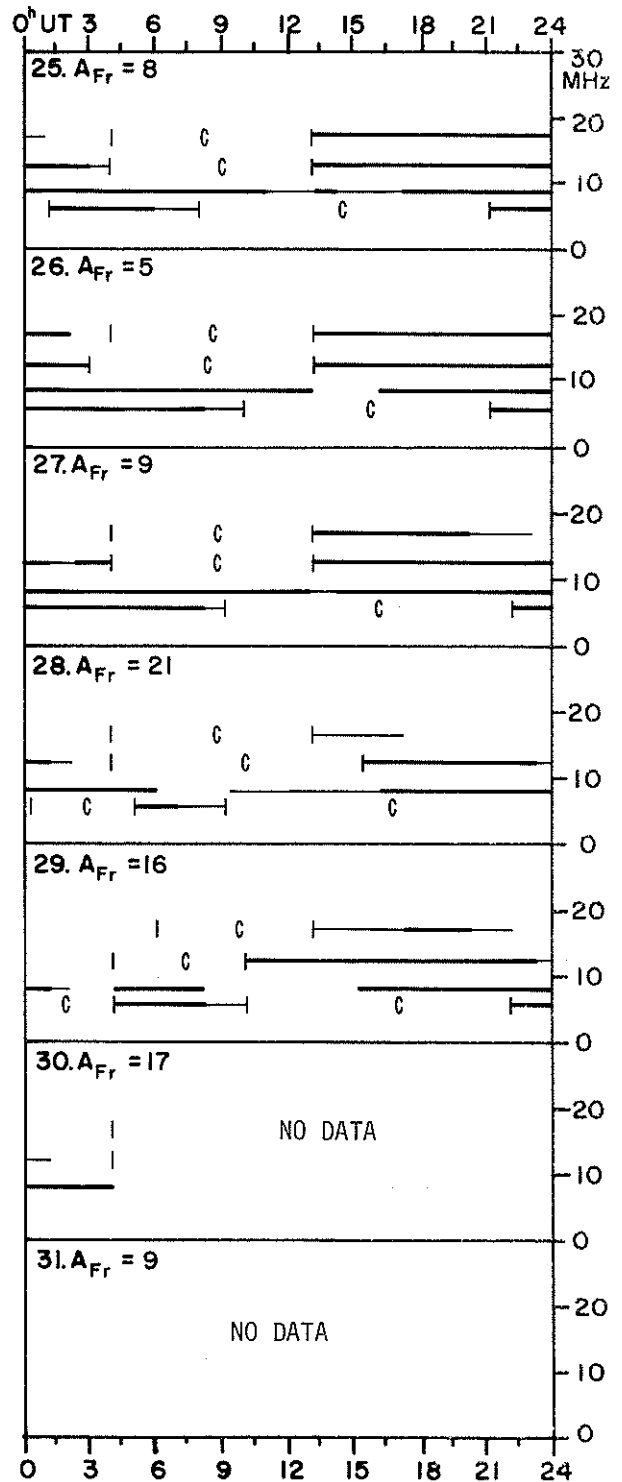
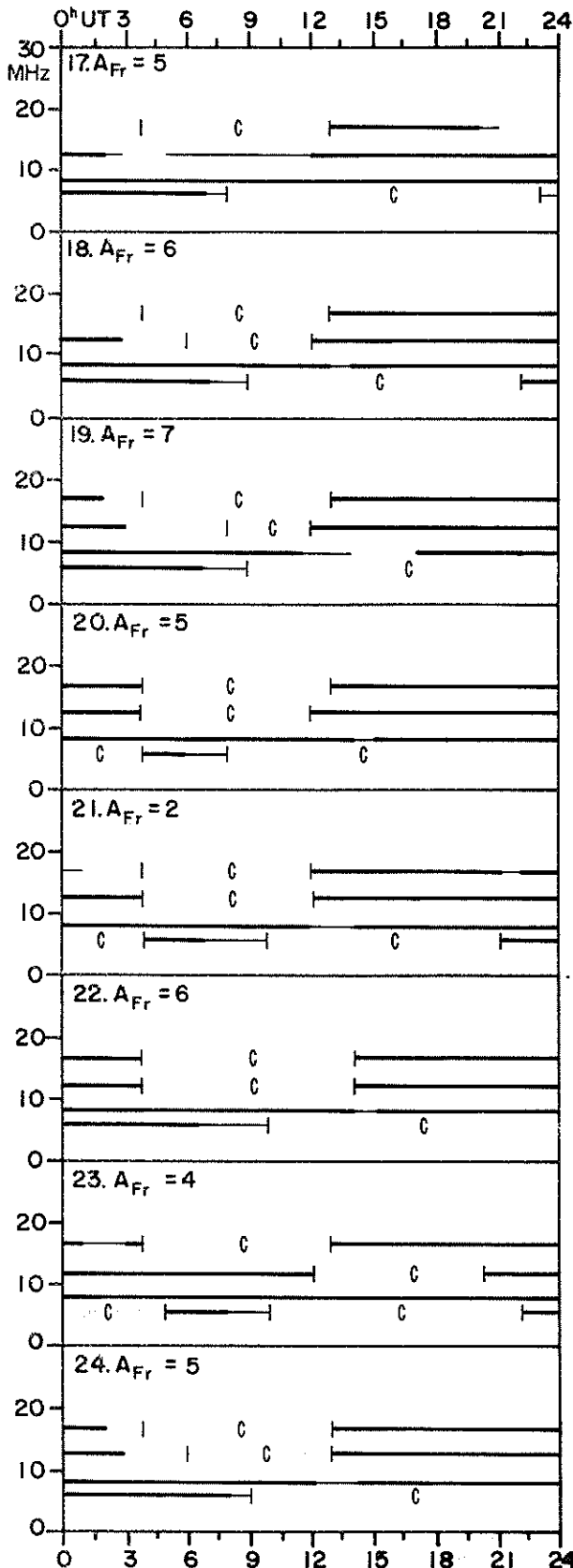
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH
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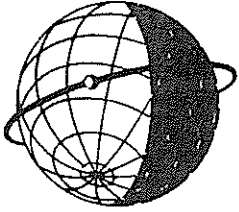


Field strengths from five frequencies, 6.425, 8.542, 12.813, 17.084 and 22.378 MHz, observed on a Lüchow.-Halifax circuit are represented above. Heavy solid lines represent field strengths ≥ -12 dB above $1 \mu\text{v/m}$ (transmitter power reduced to 1 kW). Observed field strengths between -12 dB above $1 \mu\text{v/m}$ and -40 dB above $1 \mu\text{v/m}$ are represented by the fine line. Adapted from Observations by Deutsche Bundespost

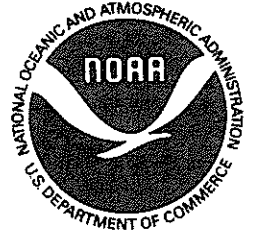
RADIO PROPAGATION QUALITY INDICES

JULY 1976

Date	TOKYO	HALIFAX	MOSCOW	CANBERRA	BRACKNELL
1	4.3	6.4	12.6	4.5	12.6
2	5.0	6.3	12.8	4.5	12.2
3	4.4	6.5	12.7	4.6	11.3
4	4.8	6.6	12.5	4.6	12.0
5	5.2	7.6	12.2	4.4	11.5
6	5.1	7.1	12.4	4.2	12.5
7	5.5	7.2	12.5	4.2	12.5
8	4.4	6.7	12.2	5.0	12.3
9	5.4	6.9	13.4	4.7	12.0
10	5.4	7.4	12.9	4.4	11.3
11	6.2	7.9	13.1	4.2	11.1
12	5.8	8.2	13.2	4.9	13.6
13	6.5	8.2	13.2	4.6	12.7
14	6.7	8.7	13.0	4.8	12.9
15	5.7	8.7	13.5	5.1	13.2
16	4.5	7.4	12.8	4.8	12.1
17	6.0	7.6	12.7	4.6	12.3
18	4.7	8.7	13.3	4.3	12.0
19	6.0	8.3	13.3	4.6	12.7
20	6.3	8.5	13.4	5.0	13.4
21	5.6	8.6	13.0	5.0	12.7
22	5.4	8.8	13.1	4.9	12.8
23	6.3	9.0	13.0	4.9	13.2
24	5.7	8.1	13.0	4.2	12.3
25	5.3	7.9	12.8	4.5	11.7
26	5.8	8.3	13.3	3.9	12.7
27	5.6	8.0	12.8	4.5	12.8
28	3.6	6.9	12.8	4.4	12.6
29	3.3	6.8	12.6	4.1	12.3
30	3.9	6.8	12.3	4.1	11.6
31	4.8	7.4	12.9	4.0	11.9
MEAN	5.3	7.7	12.9	4.5	12.3



WORLD DATA CENTER A
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The ICSU Panel on WDCs has recommended that it would be appropriate courtesy to acknowledge in publications that data were obtained from the originating station or investigator through the intermediary of the WDCs. The following statement is suggested:

"Data used in this study were provided by WDC-A for Solar-Terrestrial Physics, NOAA E/GC2, 325 Broadway, Boulder Colorado 80303, USA."